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TRANSACTIONS

OF THE

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TWENTY-FIFTH ANNUAL MEETING

OF THE

Ohio State Medical Society,

HELD AT

CLEVELAND, JUNE 14—16, 1870.

COLUMBUS:
NEVINS & MYERS, BOOK AND JOB PRINTERS.
1870.

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TWENTY-FIFTH ANNUAL MEETING

OF THE

Ohio State Medical Society,

HELD AT

CLEVELAND, JUNE 14—16, 1870.

FIRST DAY.

MORNING SESSION.

The Society met in Case Hall, and was called to order by the President, Dr. S. M. Smith, of Columbus, who introduced Rev. Dr. Goodrich, who opened the meeting with prayer. The President was assisted by one of the Vice-Presidents, Dr. S. S. Scoville, of Lebanon.

The Secretaries, Drs. W. C. Hall and E. H. Hyatt, were present and entered upon the discharge of their duties.

The Treasurer, Dr. J. B. Thompson, was present and took his seat.

The President announced as the first business in order, the report of the Executive Committee, whereupon Dr. H. J. Herrick, of Cleveland, Chairman of said committee, made the following report:

The Executive Committee submit the following report: That they have secured the hall in which we are now assembled, for the use of the Society Tuesday and Thursday, together with the small rooms adjacent to it, for the use of committees, etc. One of the small rooms has been devoted to the exhibition of such medicines and new preparations as

chemists and druggists choose to exhibit to the profession, and also for the exhibition of surgical instruments.

They have provided the necessary stationery for the use of the Society.

They have secured the steamer R. N. Rice for an excursion to Put-in-Bay and Gibralter islands, which is furnished by the profession of the county.

The committee regret that the arrangements could not have been made to have the excursion on Thursday instead of Wednesday, the day selected; but the steamer, which it was desirable and necessary to have, could only go on this day. It was, moreover, considered that the meeting could be continued in the cabin of the boat during passage to and from the islands, if thought best.

Arrangements have been made for the return of those who have paid full fare over the Cleveland, Columbus and Cincinnati railroad, also for the passage of members to and from the meetings at two-thirds fare on the Lake Shore and Michigan Southern R. R. Through misdirected messages and consequent delay on the part of the agent, reduced fare has not been secured on the Cleveland & Pittsburg, and Pittsburg, Fort Wayne & Chicago railroad. The Atlantic & Great Western road have also failed to extend this privilege as yet. Through the personal efforts of our Treasurer, arrangements have been effected for return on certificate of the Secretary, with the Pittsburg, Cincinnati & St. Louis from Columbus to Cincinnati, and with the Columbus & Hocking Valley railroad.

Favorable replies are expected from other roads, which will be duly announced.

The Committee would recommend that the time of the meetings in the hall be devoted to the presentation of reports, etc., and that the election of officers and miscellaneous business be transacted on board the boat. With this modification they recommend the order of business as at previous meetings so far as circumstances will permit.

H. J. HERRICK, *Chairman.*

Subsequently they reported through Chairman the following:

Since the assembling of the Society the storm, which has been raging for the last week, continues, the excursion to the islands has been postponed. As a substitute a more limited excursion will be given to the Society, should the weather permit, at such time as will be convenient for the interests of the Society. H. J. HERRICK, *Chairman.*

On motion of Dr. Langdon, the report was received and adopted.

Dr. H. J. Herrick now introduced Dr. C. A. Terry, of Cleveland, who delivered the following welcoming address:

Gentlemen of the Convention:

With unfeigned pleasure I, in behalf of the Medical profession of Cleveland, welcome you to our city, and assure you of our earnest desire that this visit may be as agreeable to you as it will be gratifying and advantageous to ourselves. Thirty years since I was one of a small number of professional men who assembled in this city, then a small village, to represent the Medical Society of the State of Ohio.

The contrast which this crowded assemblage presents to the scanty band of former years, is but a type of the progress which the medical profession has made in that period. In every part of the civilized world untiring energies are at work, exploring the different branches of science and utilizing all that may be of importance in furthering the great aim of the physicians' life, the mitigation and cure of disease.

A short time since, I had occasion to look into a Pharmacopœia, published in London during the reign of Charles the Second, two hundred years ago. The different articles now rejected by the profession, which cumbered its pages, are a matter of surprise and amusement—green frogs, ants, and a thousand nameless abominations unfit for mention, are gravely inserted as possessing remedial properties. Modern intelligence has swept these absurdities from our Materia Medica, though it is still overloaded by a hundred useless agents. But, though each year has added to our stores of knowledge, yet the last thirty years have probably witnessed a greater advance in scientific attainment than any period of equal length in the history of medicine. Our dreadful civil war, now happily closed, has proved an admirable school for surgical advancement. Professor Smith, in his eloquent address to the Medical Convention of last year, paid a graceful tribute to the self-sacrificing spirit and patriotism which prompted so many of our medical men, forsaking their homes and their hopes of professional advancement, to mingle in the great contest and share the dangers of the battle-field. Unstimulated by the ardor of battle, with no hope of sharing the reward of the successful soldier, they fearlessly exposed their lives by tending the wounded under fire, and without the privilege of running away in the event of defeat, they shared the captivity of their helpless comrades in the ghastly prisons of the South.

During the Crimean war, at the close of the dreadful battle of Inkerman where, for hours, the military glory of England

hung, trembling in the balance, Lord Raglan ordered a Surgeon by the name of Wilson to be called to the front, and publicly thanked him. Was it for his attention to the wounded? No? Observing a group of Russians, endeavoring to pick off Lord Raglan and his staff, he rallied a few stragglers and by a sudden dash drove the enemy from the field. For professional heroism, he would have remained forever unnoticed.

Gentlemen, I am so little acquainted with the aims and objects of Medical Conventions that I do not feel competent to touch upon this subject, and will close my remarks by extending to you a sincere and cordial welcome.

Dr. E. B. Stevens moved that the Committee on Admissions be filled. Carried.

Dr. Landon moved that the members present register their names at the Secretary's desk. Motion adopted.

The President filled the Committee on Admissions with Dr. L. T. Pease, Dr. Cleveland and Dr. Matchett.

Dr. Hart, of Marietta, Dr. Drury, of Columbus, and Dr. Brown, of Urbana, were added to the Finance Committee, on motion of Dr. Stevens.

The Treasurer, Dr. J. B. Thompson, made his report, which was, on motion, referred to the Finance Committee.

The vacancies in the Committee on Ethics were filled by Drs. Metz, Sweney, Galpin and Pomeroy.

Drs. Donohoo and Pomerine were added to the Committee on Medical Societies.

The Committee on Medical Societies made the following report:

The Standing Committee on Medical Societies, to whom was referred the application of the Delamater Medical Association to become auxiliary to the Ohio State Medical Society, have examined the constitution and by-laws of said association, find them correct, and would recommend their admission as auxiliary to this Society. Also, Fulton County Medical Society be admitted, and that the delegates of both the societies be admitted to seats in the Society.

L. FIRESTONE,
H. J. DONOHOO,
JOHN CORSON,
A. DUNLAP,
J. POMERINE.

On motion, the report was adopted.

Dr. W. B. Davis, Chairman of the Committee on Admissions, reported the credentials of Dr. E. D. Safford, a delegate from the Medical Society of the State of West Virginia to this Society, and moved that he be invited to a seat among us, and asked to participate in the proceedings. Motion adopted, and Dr. Safford was welcomed by the President, Dr. Smith, in a few well chosen remarks.

Dr. Safford being called for, came forward, and said:

I trust, gentlemen, that my presence here will be taken as an earnest of the interest felt by the profession of the State which I represent in the advancement of science.

We feel that our profession will, through the associated action of its members, in county, state and national societies, yet become a "power in the land." It is especially to local societies we are to look for that thorough and permanent training of those junior members of the profession who are shortly to take our places. The time will soon go by when ignorant presumption, and unblushing assurance, will be mistaken for sound knowledge and educated judgment; and men will require some other guarantee than the "intuitive" knowledge of a "seventh son." Compared with the profession of your magnificent State, we may be in the same condition that our State is politically, and historically, in our "infancy," and we have observed, and hope we appreciate the efforts made by our neighbors to protect and foster the truly worthy of the profession, and to refuse professional communion and fellowship to the unworthy and ignorant. As yet we have no legal protection, and any one who pays his license (and many who do not) are allowed to "practice medicine" in West Virginia. The number of irregular and incompetent candidates for professional support driven from your limits into our State border by the "legislative protection" you have secured, is, of itself, sufficient evidence of the great value of associated action.

In conclusion, allow me, in behalf of my brethren of West Virginia, to congratulate you for what you have already accomplished, and to offer you our pledge of support and co operation in furthering the great objects of this meeting by all fair and honorable means, and that the future of the profession of the State of Ohio may be all its most sanguine cultivators desire, is our most earnest wish.

The President, Dr. Smith, reported an invitation from Dr. Thomas G. Cleveland, to visit the "Charity Hospital" at

such time as would best suit the convenience of the Society. Accepted.

Dr. W. C. Hall, Chairman of the Committee on Publication, reported that *four hundred and fifty* copies of the Transactions had been published, at a cost of one hundred and eighty dollars.

The President proceeded to call the Special Committees.

Dr. P. Beeman, Special Committee on Climatology and Diseases of Southeast Kansas; Dr. P. S. Conner, on Surgical Applications of Carbolic Acid; E. B. Stevens, on Obituaries; E. H. Hyatt, on Haemetics; W. B. Davis, on Vaccination—reported papers ready at the convenience of the Society.

Dr. N. Gay, Special Committee on Military Surgery, asked to be continued, and allowed to report on the sanitary condition of Prisons, Hospitals and Asylums, instead of Military Surgery. Granted.

Dr. E. B. Stevens asked, on the part of Dr. W. J. Conklin, leave to report on the use of the Thermometer in the treatment of certain nervous diseases, instead of Bright's disease. Adopted, on motion of W. H. Mussey.

Dr. P. S. Conner, on request, proceeded to read his paper on the Surgical Applications of Carbolic Acid, which was listened to with much interest by the Society. A motion to refer the report to the Committee on Publication, with instructions to print, was made, pending which, remarks were made by W. H. Mussey, and before coming to a vote, the Society took a recess to two o'clock p. m.

AFTERNOON SESSION.

Society met at two o'clock, and was called to order by the President, Dr. Smith.

The President stated the first business in order was the consideration of Dr. Conner's paper read this morning.

Interesting remarks were made by Drs. Mussey, Safford, Dunlap, W. B. Davis. P. S. Conner, Matchett, Gay, A. N. Reed, whereupon the motion to publish the report was adopted.

Dr. P. Beeman read an interesting and instructive paper on the Climatology and Diseases of south eastern Kansas, which was, on motion, referred to the Committee on Publication with instructions to print.

Dr. Herrick, Chairman of the Executive Committee, extended an invitation to the Society, to attend a concert to be given this (Tuesday) evening, at the Central Rink. Accepted.

Also an invitation to visit the Lunatic Asylum and Steel Works, at Newburg. Accepted, and 2½ o'clock P. M. on Wednesday, named as the time for making such visit.

On motion of Dr. Landon, it was agreed to adopt the following order of business on to-morrow, to meet at 8½ o'clock A. M.

1st. The election of officers for the ensueing year.

2d. The celebrating of the twenty fifth anniversary of the Society, and,

3d. The valedictory of the retiring President; and that the citizens (ladies included) be invited to attend. Agreed to.

Subsequently, Dr. W. B. Davis, moved that immediately after the valedictory of the retiring President that the reports of the Special Committees in their regular order be proceeded with. Motion adopted.

The Secretary, Dr. W. C. Hall, presented the credentials of Dr. J. B. Livingston, a delegate from the Medical Society, of the State of Pennsylvania, to this Society, and moved that he be invited to a seat among us, and requested to participate in the proceedings. Adopted.

The President welcomed Dr. Livingston in a few appropriate remarks, to which Dr. L. responded.

Dr. O. G. Seldon, Chairman of the Committee appointed last year to petition the State Legislature for the passage of a law, legalizing the dissection of human bodies, read his report; which was, on motion, adopted; and the expenses incurred by the Committee, $40 were ordered paid.

Dr. O. G. Seldon, special Committee on Pneumonia, read his report which was received and ordered to be filed.

The Committee on Medical Societies, made the following report:

The Standing Committee on Medical Societies, to whom was referred the application of the Association of North Eastern Ohio, have had the same under consideration, and beg leave to report.

The Association has adopted the Constitution, By-Laws and Code of Ethics of the American Medical Association, holds its meetings quarterly, at such places as may be agreed on from time to time. Its proceedings are regular, and your Committee would recommend that it be made auxiliary to the Ohio State Medical Society.

L. FIRESTONE,
A. DUNLAP.

Report adopted.

Dr. McNeely, offered the following:

Resolved, That it shall hereafter be the first duty of the President, after the annual organization of this Society, to appoint a Committee on "business," whose duty it shall be to select the hour for reports of each special Committee, the elections of officers, of addresses, and the propriety of accepting, and the time of accepting complimentary invitations, to the end, that the time of the Society may be wholy devoted to questions more purely Medical. Lost.

During the sessions to-day, the following gentlemen were recommended by the Committee on Admissions as members. On motion all were elected:

NEW MEMBERS—FIRST DAY.

Dr. J. A. Monsor, La Rue.
Dr. A. W. Alcorn, Ravenna.
Dr. Dudley Allen, Oberlin.
Dr. C. T. Metcalf, Warren.
Dr. A. G, Brainard, Orangeville.
Dr. E. R. Lee, Garrettsville.
Dr. Tim Woodbridge, Youngstown.
Dr. G. W. Boerstler, Lancaster.
Dr. A. G. Bruce, Olmsted Falls.
Dr. J. D. Jones, Newberg.
Dr. P. Rouder, Cleveland.
Dr. N. V. Speece, Quincy.
Dr. D. D. Bramble, Cincinnati.
Dr. A. E. Heighway, Cincinnati.
Dr. H. E. Brainard, Cleveland.
Dr. J. E. Darby, Cleveland.
Dr. N. S. Everhard, Wadsworth.
Dr. A. J. Garme, Sandusky.
Dr. J. N. Russell, Mt. Vernon.
Dr. M. Cassett, Cincinnati.
Dr. G. O. Butler, Cleveland.
Dr. A. J. Scott, Loundonsville.
Dr. J. P. Pomerine, Berlin.
Dr. F. J. Guttard, New Bedford.
Dr. Wm. McKean, Mt. Hope.
Dr. Jno. Perrin, Cleveland.
Dr. F J. Weed, Cleveland.
Dr. Daniel B. Smith, Cleveland.
Dr. A. B. Reed, Norwalk.
Dr. D. J. McGuire, Norwalk.
Dr. W. H. Sykes, Plymouth.
Dr. J. A. Jobes, Palestine.
Dr. A. P. Nolton, Olmstead Falls.
Dr. M. Jewett, Akron.
Dr. A. B. Reed, Brooklyn.
Dr. J. N. Dalbry, Cleveland.
Dr. J. Wagoner, Ravenna.
Dr. A. M. Sherman, Kent.

Also the following Delegates:

Drs. A. E. Rankin, E. Stanley, A. J. Garme, Erie Co. Med. Society.
Dr. G. W. Russell, Mt. Vernon, Med. Society.
Drs. H. Beach, A. Jones, C. T. Metcalf, from Trumbull Co. Med. Society.

Dr. E. C. Lewis, Canal Dover.
Dr. H. D. Ballard, Findley.
Dr. A. Hurd, Findley.
Dr. Wm. H. Palmer, Cleveland.
Dr. B. S. Chase, Akron.
Dr. Jno. M. Whiting, Canton.
Dr. L. Firestone, Salem.
Dr. Kinnemann, Ashland.
Dr. S. Rixley, Pensula.
Dr. J. P. Bartolett, Washingtonville.
Dr. W. T. Ridenour, Toledo.
Dr. D. Gould, West side Cleveland.
Dr. J. W. Guthrie, Wooster.
Dr. H. Wallace, Canaan.

W. B. Davis,
A. Blymyer,
L. T. Pease,
T. G. Cleveland,
W. H. Matchett.
Committee on Admissions.

On motion, Society adjourned to meet to-morrow at half-past eight o'clock a. m.

SECOND DAY.

MORNING SESSION.

The Society met at half-past eight o'clock, and was called to order by the President, Dr. Smith, who introduced Rev. Dr. Johnston, of Marietta, who opened the meeting with prayer. The reading of the minutes of yesterday were dispensed with on motion of Dr. Hyatt.

The Secretary, Dr. W. C. Hall, presented the credentials of Dr. George W. Bradford, a delegate from the Medical Society of the State of New York, and moved that he be invited to a seat and asked to take part in the proceedings. Motion adopted. Dr. Bradford was welcomed by the President.

The President stated the first business in order was the election of officers for the ensuing year. Drs. Landon, Drury,

Buckingham and Bramble, were appointed tellers. The following was the result:

Dr. THAD. A. REAMY, Zanesville.....*President.*

Dr. H. J. HERRICK, Cleveland,
Dr. —— BROWN, Urbana,
Dr. —— MCEBRIGHT, Akron,
Dr. D. D. BRAMBLE, Cincinnati.
} *Vice Presidents.*

Dr. W. C. HALL, Fayetteville, *Secretary.*
Dr. E. H. HYATT, Delaware, *Assistant Secretary.*

Dr. J. B. THOMPSON, Columbus, *Treasurer and Librarian.*

Committee on Admissions—Dr. W. B. Davis, Cincinnati; Dr. C. P. Landon, Westerville; Dr. L. E. Pearce, Urbana; Dr. —— Cleavland, Cleveland; Dr. —— McNeely, Hamilton.

On motion of Dr. Jones, of Portsmouth, the election of Dr. Reamy was made unanimous.

Dr. M. Dawson, one of the Vice Presidents, asked and obtained leave to withdraw from the Society.

The committee on Finance made the following report:

The committee on Finance respectfully report that they have examined the books and vouchers of Dr. J. B. Thompson, Treasurer of this Society, and find them correct, as follows:

Balance in Treasury at last report	$171 48
Receipts from initiations and assessments	549 00
	720 48
Total amount of expenses as per vouchers	413 49
Leaving balance in Treasury	$306 99

We further recommend that the Treasurer receive one hundred and fifty dollars, and the Secretary fifty dollars, for the current year, as salaries. We further beg leave to recommend that the Transactions of the ensuing year be bound in cloth; and further advise the assessments this year be two dollars.

B. F. HART,
J. C. BROWN,
W. H. DRURY,
O. G. SELDON,
C. P. LANDON.
Com. on Finance.

The assessment was amended to one dollar instead of two, and the report was then adopted.

The "*Silver Wedding*" exercises in honor of the Society's Twenty-fifth Anniversary, were next in order. Dr. E. B. Stevens, of Cincinnati, delivered a Historical Review of Medical Associations in Ohio, which was listened to with attention. On motion, the address was referred to the publishing committee, with instructions to print.

Dr. Firestone read a poem prepared for the occasion by Dr. J. M. Brown, of Cincinnati, entitled the "Physician's Calling," which was also ordered to be printed with the Transactions. Half an hour was then spent in an interchange of reminiscenses of the past. Interesting remarks were made by Drs. Russell, Thompson and others, making the occasion one of great interest and long to be remembered by the Society.

The Chair appointed Drs. Scott and Matchett a committee to wait on Dr. Reamy, President elect, inform him of his election, and conduct him to the Chair. On being introduced to the Society, Dr. Reamy gracefully acknowledged the compliment of his election, and hoped to be able to perform the duties expected without discredit to the Association. The retiring President, Dr. S. M. Smith, then delivered his valedictory address, which was very interesting; and, on motion, was ordered printed with the Transactions.

On motion, Society took a recess until 2 o'clock p. m.

AFTERNOON SESSION.

President, Dr. Reamy, in the Chair.

Dr. W. B. Davis read a very elaborate paper on Vaccination, and at the close of the paper Dr. Davis offered the following resolutions, which were adopted:

Resolved, That the Ohio State Medical Society appoint a committee, to consist of five members, and one corresponding member from each county in the State, to prepare and present a memorial to the Ohio Legislature, praying for the enactment of a law which will require all pupils of the public

schools, and other educational institutions, supported in whole or part by state or county tax, and all inmates of asylums, hospitals, reform and correctional schools, work-houses, jails, penitentiaries, etc., supported at public expense, to be vaccinated upon admission to the several establishments, unless satisfactory evidence is furnished to a competent inspecting physician that the parties are fully protected by a previous vaccination.

Resolved, That it be made the duty of boards of health, where they exist, and county commissioners, where they do not, to appoint a qualified medical officer, who shall semi-annually inspect the pupils of public and other state schools and furnish a certificate of vaccination to those who are fully protected, and gratuitously vaccinate those who are not; and no pupil shall be allowed to continue in said schools who has not received a certificate of vaccination. The several boards having control of the state or county charitable, reformatory or correctional institutions, shall each appoint a qualified judicial officer, who shall vaccinate all the inmates of said institutions, without respect to any previous vaccination; and all persons admitted thereafter shall be vaccinated immediately upon their admission, but such persons as are confined for a term of years or for life, shall be re-vaccinated every five years.

Resolved, further, That the Legislature be petitioned by the same committee to pass a law requiring all cities of the first-class to establish and support vacine establishments for the purpose of cultivating and having constantly on hand reliable vacine virus.

Resolved, further, That the Legislature be petitioned to make it a penal offense for any person but regularly educated physicians to perform the operation of vaccination.

The paper of Dr. Davis was ordered printed with the Transactions.

The following resolution was, on motion of Dr. Landon, adopted:

Resolved, That the thanks of the Society be tendered to retiring officers, for the able, dignified and impartial manner they have severally discharged their duties.

Thanks to Dr. Stevens for his *Historical Review*, and Dr. J. M. Brown for his poem, were also tendered.

On motion, the selection of a place for the next annual meeting was considered.

Dr. Jones named Portsmouth.

On motion of Dr. E. B. Stevens, Cincinnati was selected as the place of meeting for 1871, and the *Executive Committee* were allowed discretionary power as to the time of calling the meeting, with a view to securing an arrangement for the meeting of the Kentucky State Medical Society, at Covington, at the same time with the meeting of this Society, at Cincinnati.

Dr. J. B. Thompson moved that the Committee on Publication be instructed to have published with this year's transaction, the Constitution, By-Laws and Code of Ethics, and that five hundred copies of the Constitution, By-Laws and Code of Ethics be published in separate form.

Dr. Hall moved to amend by inserting also a revised list of members; which amendment was accepted, and thus passed.

The Society adjourned at quarter past three, to accept an invitation to visit the *Bessemer Steel Works* and Lunatic Asylum at Newburg. An hour was spent at the Steel Works, in which the *modus operandi* of casting steel was shown to the doctors.

Large steel blocks, weighing five hundred pounds, were cast before the visitors, who evinced the greatest interest. Five tons of iron was melted and passed into a "*retort*," or, as the furnace men called it, a "*converter*." Five hundred pounds of Speigle was next melted and let run into the "*converter*." This, after being thoroughly melted, was run into blocks, as aforesaid, being now converted into steel. Each physician took away with him a specimen of Speigle.

From this factory the visitors went to the rolling mills, where steel rails are made, and next to a mill where nuts and bolts are manufactured. The visitors were highly pleased with the works. Next, the party walked to the grounds of the State Lunatic Asylum. Drs. Stewart and Hobson conducted the visitors through the wards, all of which seemed to be in the most perfect order. Out of three hundred and eighteen patients, of both sexes, there were but four or five in close confinement. At about half-past seven the party sat down to a bountiful supper, and thereafter Dr. Smith expressed the thanks of the Society to the Directors of the Asylum for

the kind reception and entertainment. Other remarks were made by Drs. Reamy and Russell, when the Rev. Mr. Curtiss responded on behalf of the Trustees. The Society returned at nine o'clock on the Cleveland and Pittsburg train, all highly pleased with the visit.

THIRD DAY.

MORNING SESSION.

Society met at 8 o'clock, a. m., and was called to order by Dr. Reamy, the President. The reading of the minutes were, by vote, dispensed with.

The Constitution and By-Laws of Cleveland Academy of Medicine was, on motion, referred to the Committee on Medical Societies, which Committee subsequently reported that said Academy of Medicine, having adopted all the requirements, was entitled to become an auxiliary to the State Society. Adopted.

The Secretary, Dr. Hall, presented and read the following preamble and resolutions, adopted by the American Medical Association in May, 1869; which were referred to a committee of five, to report as soon as possible:

PREAMBLE AND RESOLUTIONS.

WHEREAS, The history of medical legislation in the various states of this Union, clearly shows that no reliance can be placed on either the uniformity or the permanency of any laws relating to the practice of medicine; and

WHEREAS, The results of all the efforts made during the last twenty-five years, to elevate the standard of medical education, through concert of action among the numerous medical colleges of this country, have proved with equal clearness that such concert of action, in an efficient manner, is unattainable; therefore, be it

Resolved, That whatever is done to establish and maintain a just and fair standard of medical education throughout our whole country, must be done by the profession itself, through its own voluntary organizations, in the same manner that it now establishes and enforces its code of ethics. The profession is as competent to declare, through its representatives in the National, State and local Societies, what shall be the standard of attainments for those to be recognized and admitted into its ranks, and to establish the boards or agencies by which compliance with such standard shall be ascertained, as it is to declare what shall be the ethical rules governing the conduct of those already admitted.

Resolved, That this Association earnestly request each State Medical Society to appoint, annually, one or more Boards of Examiners, composed of five thoroughly competent members, whose duty it shall be to meet, at suitable times and places, for the examination of all persons, whether graduates of colleges or not, who propose to enter upon the practice of medicine in their respective States, except such as has been previously examined and licensed by a similar Board, in some other State.

Resolved, That each State Medical Society be requested to make such regulations concerning the pay of the Boards of Examiners, and the fee to be charged for a license to practice, that the former shall in no case depend on the amount received from the latter.

Resolved, That each State Medical Society be requested to require its Examining Board, or Boards, to exact of every applicant for examination, adequate proof that he has a proper general education; is twenty-one years of age, and has pursued the study of medicine three full years, one-half of which time shall have been in some regularly organized Medical College, whose carriculum embraces adequate facilities for didactic, demonstrative and hospital clinical instruction.

Resolved, That each State Medical Society be requested to act on the foregoing propositions, at the next regular annual meeting after the reception of copies of the same, and if approved and adopted by the State Medical Societies of two-thirds of the States, this Association shall deny representatives from all organizations who longer refuse to comply with the same, and shall recommend the State Societies to do the same, and all persons who, after that date, seek to enter upon the practice of medicine without first receiving a license from the State Board of Examiners, shall be treated ethically as irregular practitioners.

Resolved, That in adopting the foregoing resolutions, by

which it is proposed to treat the medical college diploma the same as the diploma of any literary college, this Association is actuated by no desire, to injure the Medical Schools of our country. On the contrary, by the adoption of the fourth resolution at the same time that the value of the mere college diploma is practically nullified, it is the desire, and confident expectation, that those institutions will be greatly benefitted; because they will be forced to rival each other in the extent and efficiency of their courses of instruction, instead of the number of diplomas which they can annually distribute.

Said committee made the following report, which was, on motion, adopted:

MR. PRESIDENT—Your Committee, appointed to examine and report preamble and resolutions adopted by the American Medical Association, in May, 1869, and hereunto annexed, beg leave to report that they have examined them as closely as the time allotted them would permit, and recommend that the specified resolutions be laid over, and the following be adopted:

Resolved, That this Society has full confidence in the ability and integrity of the medical teachers of our State, and while we admit the existence of the evil sought to be remedied by the said preamble and resolutions, we believe may be more effectually removed by our earnestly recommending our teachers in our Medical Colleges to renewed vigilance in examining candidates for the degree of Doctor of Medicine; and believing that we ourselves are often much to blame by admitting in our offices students of medicine, who have not a thorough English education, to say nothing of the classics; therefore,

Be it further resolved, That the Society so alter its Constitution or by-laws as to hold each individual member responsible for admitting under his tuition any student of medicine who has not, by a personal examination, proven himself at least thoroughly acquainted with the English language; and if any member shall so violate said by-laws, he shall be publicly reprimanded, and suspended or expelled.

And we further recommend, that this subject be referred to a special committee to report at another meeting.

All of which we most respectfully submit.

[Signed.] A. W. JONES, M. D., Ch'n,
JOHN CORSOM, M. D.,
J. A. STOCKSTILL, M. D.,
A. E. BALL, M. D.,
E. B. HARRISON, M. D.,
Committee.

Dr. J. R. Black read his volunteer paper on the importance of a Concerted Account of the Prevailing Diseases and their

management throughout the State, which was, on motion, referred to the Publication Committee, with instructions to print.

Dr. Hall inquired what was the wish of the Society in regard to the paper of Dr. Conklin, on the use of the Thermometer in the treatment of certain nervous diseases.

On motion, Dr. Conklin's paper was referred to the Committee on Publication, with discretionary power.

Dr. E. H. Hyatt moved to reconsider the vote wherein the report of Dr. O. G. Seldon, on Pneumonia, was ordered filed. Adopted. He then moved that Dr. Seldon's paper be printed with the Transactions, which motion was concurred in.

Dr. McBride read a paper on the Specific Action of Cantharides, which was ordered printed.

Dr. Seldon offered the following resolution, which was adopted:

Resolved, That this Society tender to the citizens and physicians of Cleveland, and especially the Executive Committee, their hearty thanks for their kindness and courtesy, and for their efforts to render our visit to their city pleasant and agreeable.

Dr. Grey reported orally his attendance on the meeting of the Indiana State Medical Society, as a Delegate from this Society. Said he was courteously received, and that the meeting was pleasant and profitable in every way.

Dr. Seldon, Chairman of the Committee on Finance, reported a bill detailing the items of expense of the Secretary for the past year, amounting to $32, which was, on motion, ordered paid.

Dr. Herrick, Chairman of the Executive Committee, stated that it was now time to adjourn to the steamer, which was in waiting to take the members and their families to Rocky River, at which place the Society could finish their deliberations.

After a very pleasant ride of an hour and a half upon the Lake, the steamer landed at Rocky River, and the members and their wives assembled at the *Cliff House* where the con-

cluding business was transacted. Dr. Smith presented kind regards and greetings of Dr. Wm. Awl, of Columbus, to the Society. P. Baron, M.D., of Ravenna, and Dr. Safford, of Virginia, were elected honorary members of the Society. During the second and third days the following new members and delegates were elected:

Dr. David Silvers, Apple C'k Stat'n.
Dr. Charles A. Terry, Cleveland.
Dr. E. J. Cutler, "
Dr. A. H. Underwood, London.
Dr. L. S. Murray, Medina co.
Dr. Robert Seldon, Shanesville.
Dr. A. G. Hart, Cleveland.
Dr. William Watt, Kenton.

Dr. H. D. Ballard, Delegate from North Western Medical Association.
Dr. M. S. Pixley, " " Scioto County Medical Society.
Dr. W. R. Bricker, " " Richland Co. Med. and Surg. Society.
Dr. J. N. Mowry, " " " " "
Dr. S. S. Scoville, " " Lebanon Medical Society.
Dr. W. McCabe, " " Kansas State Medical Society.

Dr. J. Jones, Wellington.
Dr. R. Randall, Bath.
Dr. L. M. Jones, Logan.
Dr. N. M. Jones, Cleveland.
Dr. N. S. Ebright, Middlebury.
Dr. J. F. Hobson, Newburg.
Dr. J. Strong, jr., Elyria.
Dr. S. P. Bishop, Delta.
Dr. C. D. Noble, Oberlin.
Dr. J. W. Houghton, Wellington.
Dr. P. C. Bennett, Drakesburg.

The Chair announced the following

STANDING COMMITTEES.

Executive—E. B. Stevens, W. W. Dawson, P. S. Connor, W. B. Davis, A. J. Miles, G. A. Doherty.

Publication—W. C. Hall, J. B. Thompson, J. M. Wheaton, W. H. Drury.

Finance—W. H. Matchett, W. H. Mussey, T. B. Williams, L. T. Pease, —— Sharp.

Medical Societies—E. Buckingham, S. S. Grey, O. G. Seldon.

SPECIAL COMMITTEES.

Plea of Insanity in Cases of Homicide—S. M. Smith.
Practice of Medicine—W. J. Scott.
Uterine Catarrh—E. B. Stevens.
Hernia Cerebri—P. S. Connor.
Physical and Vital Force—S. S. Scoville.
Antagonistic Power of Opium and Belladonna—J. A. Little.
Hydrate of Chloral—D. D. Bramble.
Chorea—O. G. Seldon.
New Anaesthetics—J. B. Hough—*Continued.*
Diseases of Larynx—R. Wirth—*Continued.*
Puerperal Convulsions—J. Pomerine—*Continued.*
Improvements in Surgery—W. H. Mussey—*Continued.*

DDRESS

RESIDENT,

COLUMBUS, OHIO.

ANNUAL ADDRESS

OF THE

RETIRING PRESIDENT,

S. M. SMITH, M. D., OF COLUMBUS, OHIO.

GENTLEMEN—As time is an essential element for the development and completion of any great purpose or enterprise, I may congratulate you that our present meeting marks so auspicious an event as the ending of a quarter of a century in the life of our organization. In the rush of events that marks our age so characteristically, it is worthy of note that we have more than preserved our existence; that we have in some degree marched in tune with this progress; that we are not out of tune with the spirit of freedom, independence and power; on the one hand, not so chained to the obsolete past, as to carry it about "as a body of death," nor yet so intoxicated with a wild, reckless spirit of revolution, as to cut loose all the ties that bind us to its sacred memories, or anchor us surely to its unchanging truths. It has been the grateful and welcome duty of another to gather up these precious memories, and pass in review the important events of the first era of our existence. Again I congratulate you on a purpose so wisely designed, so completely carried out. If the miser, as he gloats over his glittering hoard that his wasting years of toil and self-denial have accumulated, has

a bated thrill of pleasure, may we not indulge in unchecked gratification. Our treasures are a free possession, whose title none may dispute, treasures that no rust can corrode, no thief break through and steal.

None will deny us the happiness conferred by this contemplation, but few, or none, would advise us to linger too long in this pleasing mood.

The very means by which this accumulated wealth of experience and research, certification of truth and refutation of errors, has been attained, suggest that we can in no way make this occasion so profitable, as to inquire wherein our progress has been impeded; where we have incorporated errors that vitiated our conclusions; how much of fruitless labor has wearied life that might have yielded great results if properly directed.

The student of elementary knowledge in our art is first directed to the contemplation of healthy organizations, and the normal performance of functions, to the great hygenic and nutritive influences that preserve and perpetuate these; and then he is asked to note the *perversions* of all these representative elements of health, and that, he is told, is *Disease.* In the practice of that art, in the daily routine of the physician, these perversions will occupy a large share of his study, and engross, with intense interest, his severest attention. To their arrest, correction and removal he will devote the vigor of his life. With habitudes thus acquired of constantly looking at the faults and the follies, at the short-comings and the failures of the body, may we not be excused, if we should turn to the great Medical Body, and with no undue timidity, yet with no irreverent presumption, assume to inquire into some of *its* manifestations of disease, some of its foibles and follies, some of its short-comings and failures. This, I trow, we may attempt, with the same worthy purpose with which we contemplate the gaping wound, or search after the deep malady—that we may minister to the healing of the one and the cure of the other.

I propose then, gentlemen, with your indulgence, to exer-

cise the less gracious, but, I trust, the not less profitable office, of inquiring into some of the faults and defects in the cultivation of our profession, that retard its progress, leaving to others the more pleasing duty of singing its triumphs and recording its grand achievements, but claiming an equal sympathy in their pleasing task.

Will the free and generous acknowledgment of our faults and deficiencies be less worthy of us, and lead to less important results, than the unhesitating recital of our aches and pains, of our deranged functions and sensations, or the marshalling for inspection our offensive sores and our repulsive secretions. We seek, in either instance, the aid of correcting skill and the restoring power of healing remedies. How can we take the first step without such a temper? How can we cultivate such a temper without a clear appreciation of our deficiencies and the great desirableness of their removal?

The necessity of reform has been from year to year, and time to time, a topic of discussion in all the great medical associations and societies of our country, and the discussion has been marked by a spirit as varied in the interests and impulses of the disputants. In many instances it has issued in valuable suggestions, made with honest intent and purpose, as to the best means by which to accomplish the great object. The usual drift has been to look to the schools to inaugurate these great changes, while, in many instances, they have been charged with being the great obstructing causes of their arrest and retardation. All acknowledge that great difficulties lie in the way, and many have the candor to *share* the blame of this slow progress, instead of rolling the whole responsibility upon the schools.

Let me briefly catalogue a few of the acknowledged defects and faults in the medical education in our new, but rapidly progressing country. Imperfect preliminary education, defective training in offices—too short and not sufficiently exclusive time given to elementary branches — too early entering upon the study of the practical and applied branches.

In the *schools*, no *graded* course of study according to the proficiency and advancement of the student, as example, a primary or preliminary, a secondary or junior, and a senior department, the first consisting of two years of faithful application to the elementary and related sciences; then a year to the great principles, or "Institutes," that uderlie and apply to the practice of our art; and then a fourth year, or more, to the clinical application of all this knowledge, thus carefully, regularly and thoroughly acquired; the curriculum of studies, not sufficiently comprehensive; an insufficient number of teachers; then too short lecture terms, the great superiority of eastern over western, of metropolitan over provincial schools—a supposed irresponsible power in the conferring of degrees, "with examinations to suit." Therefore, the necessity of dividing the teaching from the examining and the power of conferring of degrees. These and kindred topics have been included in the discussions on medical education and medical reform. They are of acknowledged importance, many essential to any successful progress. But a question, not less pertinent, is to find what *can best be practically accomplished.* The world abounds in *impracticable* reformers, who, accepting the uncontroverted idea of "a thing being right in itself," rush to the conclusion that *therefore* it must be applied without delay. The legislator or reformer who consults only his own view of the fitness of things, or abstract moral rules, or philosophic laws, and then finds that his laws are not obeyed, or his reforms wholly inoperative, would more wisely ask what, with the difficulties inherent in the nature of things, is practical, and then spend his energies in doing that which *can* be done.

The honest, earnest searcher after good, who desires reform without destruction, may inquire where rests the responsibility of these defects and grave faults, and will probably come to the conclusion that it is a *divided* responsibility, and both colleges and the profession at large must each shoulder a share of the blame. His more earnest inquiries will be after the surest means of removing the obstructions, without reference to individuals or organizations.

With all the advantages of the best organized institutions, equipped in every department with the best selected, and most abundant means of illustration, the most profound, eloquent and apt teachers—there are some things they cannot command, cannot furnish; of these the most desirable, the most essential, are brains—a capacity to receive instruction, a power to appropriate it, an industry that shall persevere until success is conquered. This capacity, this industry, this persevereing toil, can alone command high position and attainments. These are often secured without the helping hand of a fostering alma mater, though with disadvantages in time, completeness and with a postponed triumph. Shall we not infer from this the greater importance that attaches to the individual over the mass, to the man over the organization, in any great reformatory movement.

As we stand between the infinitely great, revealed to us by telescopic vision, and the infinitely small, disclosed to the minute searchings of the microscope, we turn to the latter as the representative form. We recognize that every organized being is developed from a cell, itself evolved from a nucleus, with ultimate affinities, that will determine all that follows in form, function, and all the grand results that we call life. It is the *individual* in the coming organization.

Allow me then to inquire what are some of the duties that attach to the *individual* in our profession to promote its highest interests? What are some of the defects, faults, short comings in the *individual*, that retard progress, impair the fair name of our great art, in the estimate of an intelligent, but just public, and often interrupt the stream of blessing it bears to suffering mortals; what are some of the means by which the individual may correct his errors, enlarge his powers, and become a contributor to cumulating treasures, from which he now only makes drafts—be an honor, and not a dead weight to the noble brotherhood; and thus solve the great question of reforms by *reforming himself*?

Is it the rule, or the common experience, that any great change, any great revolution for the better, in church or state,

in party or government, in guild or profession, has originated with and been carried on by those in power, in place, in quiet undisturbed possession of influence and honors?

Is it wise to consult selfishness, with the expectation that it will voluntarily immolate itself; power, that it will cheerfully surrender; honors, that they will be laid aside at a request?

Is not the motive to correct, even abuses, silenced by the temptation to ease or comfort, or even more generous impulses frightened from their honorable purposes, by fears honestly entertained that changes, *may* work mischief rather than benefits.

Isolating ourselves from all organizations, standing alone in the ranks, and each accepting the duty and responsibility that falls to his lot, let us candidly ask, what are some of the grave errors into which, as students and practitioners of medicine, we fall, errors that retard our progress, prevent us from making substantial accumulations of knowledge, and from using it with greater certainty and efficiency in the practice of our art? I take the liberty of alluding to a few that are prominent.

1st. A *want of precision in language*, a failing to appreciate its full meaning and purport. We seem often to almost verify the sarcasm that language is to be used for the purpose of obscuring thought. The student starts with this vague, indistinct and often confused knowledge of the import and value of the terms in most common use, and like the flickering light carried in the darkness, its bewildering shadows only serve to confuse and lead astray. The extent and pernicious influence of this want can only be known by asking for clear definitions of some of the terms in daily use in the different departments of study that he may be pursuing. When we call for explanations of the more compound and intricate processes, we will find that the defect is about equally compounded. But a more subtle error than this often exists. The language used is correct, and you credit the student with accurate knowledge; but it is only an

exercise of memory that recalls the words that encase the truth, but like the dead fly in amber, with no mental appreciation, no true conception that calls up *vividly* before the mind the relation of the thing defined. He would not recognize the *thing* if it were before his eyes. Can these things exist, as they exist in the student life, and not be prolonged into professional life, habit and practice? Our own consciousness if we question it honestly, our very partial observation of others will answer this question promptly, if not satisfactorily.

2d. A want of *accuracy* and *care* in *observation* and *experiment.* This may originate in defective attention, imperfect capacity or untrained habits. In an art so dependent for its growth upon this source, its vitiation is as productive of evil, as the adulteration of drugs in our practice or the deterioration of our food to our healthful nutrition. Its culture marks the distinction between the men that grow and the men that are *planted.* With what different results do two persons look over a landscape, still more travel over and observe its details, and yet still more, if they are commissioned to investigate minutely its resources. The one comes back with a few "general observations," expressing only vagueness, the other with items well defined, objects carefully observed and noted, marked geological features and specimens, rare plants, number and variety of forest trees, character of soil, supply of water, etc. Do we not see a similar difference in the mode and result of the practical life of two physicians, when called upon to investigate a case presented? To one, the vaguest outline as indicated by a few prominent symptoms and these, perhaps not distinctive or characteristic, alone attracts attention; no special or definite character is impressed upon mind or memory, while to the other it becomes a magnet to draw out attention, invite the severest scrutiny, reveal to him rare and important points, and demand all his strength of research, comparison, tests and influence.

Might we not, with justice, make the demand of every observer that he should be ready to convince even a sceptic,

and in the words of the celebrated Borden, ask, "pray where did you observe, how did you observe, and what is of still more consequence, what *right* had you to observe, what precautions did you take against deception, and what proofs have you that you were *not* deceived?"

3d. More important than all others, and perhaps in a degree including all others, is the *want of a genuine love of truth;* of truth for its own sake, fully accepting it as the vitalizing element. From the days of John Hunter's indignant protest against the "false facts" that so corrupt and embarrass all medical investigations, to this day of new discoveries, falsely so-called, whether made by microscope, chemist's test, by cures reported by the scores, or by the false reasonings, our greatest enemy has been this reckless disregard of truth. If, as has been said by Dr. Holmes "the physician, when he makes an unnecessary visit, whenever he writes an unnecessary prescription tells a lie," how much more untrue are "all false pretences, whether spoken or acted; all superficial diagnosis, when the physician does *not* know what he pretends to know; all unwarranted prognosis and promises to cure; all claiming for treatment that which belongs only to nature; all shallow excuses for bad practice." But how aggravated is this treason to truth, when these falsehoods are marshalled into the ranks of medical experience in books and journal articles, embellished by engravings, certified to by microscopic revelations, that others, more skilled can never find; by chemical processes that violate the laws of chemical combinations; by reports of cures affected by medicines that prove inert or worse in the hands of others who administer them in the same diseases and in the same doses.

If "truth is the breath of life to human society," it is the essence of all science. "Shams" are its counterfeits, and they are to truth what galvanism is to life—motion but not power.

The requirement then, of greater precision in the use of terms, a severer scrutiny in our observations and experiments, a recognition of the thousand varying circumstances growing

out of false statements, false perceptions and exaggerations, that influence the results that we call "facts, experience," will only equip us to *start* in the search of true knowledge. A noble, chivalric loyalty to truth, pointing like the needle to the pole, will be our safest guide. By careful, honest, verifying repetitions of our observations, until we can be assured that we have found the truth, and the cumulation of such truths will justify us in making deductions that will guide us in new investigations; but we must be assured that a hasty deduction is the acceptance of a blind guide, that will lead us into error.

Where and how shall we best correct our loose, inconsequent, often perverting reasoning? The late Bishop Thompson, a noble member of our profession, from whose grave, sad mourners have but just parted, in an annual address before the Trustees, Faculty and students of Starling Medical College, presented in a clear, forcible and elegant manner, the subject of "Logic in its relation to Medical Science." From this, I take the liberty of quoting a few sentences. After showing how little medical studies, as usually pursued, tend to encourage habits of reasoning, he assserts "that if physicians had more argumentation they would have fewer disagreements; did they look each other in the eye, week by week, and state propositions, test arguments, he thinks they would be more fraternal; they might still differ in theory, disagree in opinion, and vary in practice; they might occasionally, by covetousness, be provoked to contention, by envy to strife, but their differences would not lead to such altercations, their disagreements to such disputes, their variances to such dissentions and their contention and strife to such ill-blood as to fix upon them the distinction of "genus irritabile." Then stating the leading characteristics of the Baconian induction and the scholastic deductive philosophy, he points out clearly how their combination may best subserve the cause of truth, and be of incalculable benefit in correcting error in medical investigations; summing up their essential differences in these comprehensive sentences. "Induction

ascends from particulars to universals; deduction descends from universals to particulars. Induction leads up, fact after fact, until a general principle is established; deduction unfolds the assertions wrapt up in a general principle and shows its various bearings. Induction discovers truth not formerly possessed; deduction discovers truth not formerly perceived. Induction requires caution and judgement; deduction requires logical skill. Induction is chiefly a process of investigation; deduction is throughout a process of strict reasoning. Induction *infers*, deduction *proves*." Hence the value and importance of combining them; we should more faithfully apply the most careful induction in the gathering, sifting and retesting our facts, but we should never discard the rules of reasoning, never repress or discredit dialectics, because they have been used in the profitless pursuits of the school men.

We would commend the suggestion of this address to the careful perusal of all who are in earnest to avail themselves of the best means of *personally* advancing in solid attainments in their profession.

Does any one doubt whether these grave faults exist? whether they are the sources of errors introduced, propagated and vitiatingly perpetuated in all our investigations? Let him ask in his intercourse with medical men, a well-defined explanation of the term he hears constantly repeated. "Billiousness" an affection of the liver,"—when no *signs* of disease of that organ are present, "an affection of the kidneys," when the only departure from its perfect health is a slight irritation at the neck of the bladder. "Stimulating, rousing the secretions," "emulging the billiary ducts," "alterative action,' "equalizing the circulation," "congestion," "congestive fevers," "correcting secretions," confounding secretions with excretions, secretions with exudations, etc., ad infinitum. A close, pressing inquiry after the conception that exists in the minds of those using these terms, will, I infer, elicit more fog than logic. Is there any just excuse for such want of accuracy? Are the means of acquiring clearer views, not within the

reach of those who blunder? Have they availed themselves of the best accredited means for securing knowledge? How many faithfully acquire a facility and aptness in the use of physical diagnosis, that so accurately and certainly determines many morbid states and changes, or make correct observations of the amount of secretions, as of urine, and apply the tests for its most characteristic changes, the application of the microscope, the use of the thermometer in disease, the capacity of the chest, rate of circulation, relation between circulation and respiration, the action and sounds of the heart, and their origin?

No one doubts the essential, absolute necessity for accurate ready-at-hand knowledge of these and a thousand other things, for the daily, successful practice of medicine. Instruction has been given in all points, (by the schools) is found in all text-books, has been apparently acquired by the student, and he starts out with honest determination to perfect his knowledge, identify it with himself, make it a part of his very being. But his zeal abates, his application flags, his energies fail, his ardor for truth cools, and he falls into the ruts of routine, or seduced by the glare of untried fancies, that are constantly rising along his pathway, he follows with an unstable fitfulness the phantom of the hour.

Is there any community of a dozen physicians that has not a well defined representative of these two extremes; the one iterating, re-iterating day after day, month after month, yes year after year, the same medicines in the same questionable combination for half the diseases, with their diversified character, grade and stage that occurs in his practice; the other rarely adhering to one course of treatment in the same disease for half a dozen cases in succession, or for as many successive months?

Where, then, shall we begin the reform, if not in habits of the *individual*, pressing home upon each one the high obligations that he must *personally* meet?

With acknowledged defects, how can we correct them; with honest purposes to favor and press forward improvements and reform in our great art, how can we best and most successfully secure them?

Unite with me in making this inquiry and pressing it to some of its legitimate results.

"We put too much faith in systems and look too little to men" says D'Israeli, and might he not by antithesis add: we abuse too lavishly the defects of systems and too much ignore the vices of men. "The worth of a state in the long run is the worth of the individuals composing it," says John Stewart Mill.

Shall we not then inquire what will most surely and successfully enhance the value of the *individuals*, that their aggregate worth may make a grand sum total. The office of systems, of governments, is rather negative than positive, being protective but not active in the exercise of influence. Laws may secure to us the quiet enjoyment of the fruits of our labors, but these accumulations are the products of our own exertions. No laws can make the idle industrious, the thriftless provident, or the drunken sober. Such reforms can only be effected by means of individual action, economy and self-denial; by better habits rather than greater rights. The natural process and all experience prove that the worth and strength of a state depend far less upon the form of its institutions than upon the character of its men. It is but an aggregate of individual conditions; and civilization itself is the grand total of the personal improvements of the men, women and children of whom society is composed. National progress is the sum of individual industry, energy and moral worth, as national decay is of individual idleness, selfishness and vice. Then the highest patriotism and philanthropy consist in aiding and stimulating men to elevate and improve themselves by their own free, independent, individual action. No one, perhaps, will controvert these aphorisms as applied to government and society. Do they not apply with equal force to any great organization, profession or guild composed of individual members?

Does not the grade, progress or perfection of any such body, depend upon the more or less perfect individualism of its members? Will not the same principle eminently apply to the profession of medicine, as represented by the great body of physicians? From the very incompactness of their organization, the integral character of their existence and position, they stand each as a representative of the body in the community, and the community looks to them, thus individualized, as the profession.

Possessing no great machinery that can be moved at will, no centralization of power that can command changes in all the realm of medicine, we are compelled to look to—to appeal to the individual—to each member as he stands in his place, and ask him to move forward in the line of progress, to bring his contribution to the great treasury of tested truths, each like the Jew in the rebuilding of the walls of Jerusalem, to build over against his *own* house, that all the circuit might be completed.

Gibbon says "every man has two educations—one which he receives from others, and one more *important*, which he gives to himself;" and Sir Walter Scott reiterated that "the best part of a man's education is that which he gives to himself." The schools may do a most important, a most essential work, in communicating instruction, but it is the self-culture that determines the success.

The admission of the faithful, persevering student of medicine to its honors and responsibilities, by conferring upon him a degree, can in no just sense be construed into a full indorsement of his assured capacity for fulfilling all these responsibilities. It is rather a negative assertion that he is not ignorant of anatomy and perhaps of physiology; that he knows much more of materia medica, and, perhaps, chemistry, than when he began his studies; that he can repeat what are the received notions on pathology, and the mode of applying its principles to the cure of disease. But all the aptness, the skill in the *use* of this knowledge is yet to be acquired, that will be the true test of his capacity. The ordeal yet lies be-

fore him. The inspection and enlistment of the recruit, is no certification that he will become the soldier to endure the campaigning. It merely asserts that he has no hernia, no varicose veins, no bellows murmur at his heart, no tubercle in his lungs. It cannot determine that he will endure the march, bear the burden, and, finally, when the hour of battle with its surprise, its confusion, its tremor, comes, that he will go steadily to the deadly breach where the chances of victory and death are only equal.

The trim twig, that we transplant from the nursery bearing a label of good promise, may not endure the exposure, may not grow and harden into the strength that can fulfill that promise.

It is only the mature development of a rigid self-culture that determines professional character; and character, which is but human nature in its best form, represented by its highest mental and moral culture, will give *courage* to seize opportunity that so often flies beyond our reach; *honor* to protect against ignominious defeat, or a treacherous betrayal of professional integrity; and a *self-reliance* that trains its resources into powers, that give greater security of success, than any amount of talent or range of genius, without these.

Dr. Arnold, so justly distinguished as an educator, says: "if there be one thing on earth which is truly admirable it is to see God's wisdom displayed in blessing an inferiority of natural powers where they have been honestly and truly cultivated." Hugh Miller, at one time an apprentice to a mason, said: "his master put his conscience into every stone he laid." His work endured the test. The London brewer that put his character into his beer, making it generous, laid the foundation of a fortune by creating a demand for it around the world.

We never make too great demand upon our powers, when we require that they shall be taxed only to their healthful limits. The sluggard that hides his talent in a napkin may complain, but the diligent, in the end, reap a rich reward.

> The wise and active conquer difficulties,
> By daring to attempt them; Sloth and folly
> Shiver and shrink at sight of toil and danger,
> And *make* the impossibilities they fear.

A section of the walls of our national capitol is decked with a painting depicting long lines of emigrant trains wending their way from the far east, over the mountains, down the valleys, across the plains, up the steep western summits, whence is seen the smooth Pacific with its beautiful fringe of green shores; from that last high peak, the advance leader of the train looks back exultingly to tell the glad news and inspirit the coming line. The limitless expanse, the boundless resources, the rich scenery, the manly forms struggling against all difficulties, the cheerful, encouraged and courageous faces, representing all ages and nations with all the varied equipments of the train, are the groupings that, at a glance, foreshadow the foundation and rise of the coming empire. Around the margin of this picture are inscribed these significant sentences:

> "Westward the star of empire takes its way."
> "No pent-up Utica contracts our powers,
> But the whole boundless continent is ours."
> "The spirit grows in its allotted spaces; the mind is narrowed in a narrow sphere."

These sentences assert the great truth, that the wide expanse of a continent, with the grand scenery of its mountains and its cataracts, its broad plains and its deep rivers, its rich mines and its dark forests, inspire and determine grand results in the nation's growth and progress.

If, then, the scenes into which we are thrown and the objects upon which we spend our mental force will react upon our powers, influence the development and growth of our minds and character, how favoring the fortune of those who are born to so propitious surroundings. Can any calling in life, present a wider field or more tempting object to call out all the resources of the highest intellect, or the enthusiasm of the warmest heart, than the boundless range of sciences included in the legitimate circle of medicine?

Let us accept the heritage and the labor offered to us, and each, in his place, occupy and cultivate and bring to the great storehouse the results of his toils; and what may we not expect as the rich product.

Even the minute contribution of the coral insect, at last lifts the island surface, with its foundations far down in ocean depths, above the waves, in time, to be decked with verdure and bear rich fruits. If our labors individually seem small, yet their grand aggregate will litt the profession to an eminence that will solve all the problems of reform and progress.

Surgical Applications of Carbolic Acid.

BY P. S. CONNOR, M. D., CINCINNATI, OHIO.

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Respecting the "Surgical Applications of Carbolic Acid," much has been said and written, yet the real value of the agent and its modes of action are by no means well established. They only can do much towards determining the therapeutical importance of an assumed remedy, whose hospital positions enable them to contrast large numbers of cases similarly circumstanced, except in the single item of the use or non-use of such remedial agent. The limited experience that every one must have, who is only in ordinary private practice, renders any expressed opinion, based solely on such experience, an opinion carrying with it but little weight. Particularly must this be true when the solution of the therapeutical problem proposed necessitates an experimental seriatam elimination of a number of factors, that their non-essential character may be fully established.

Any article of the Materia Medica that is used for everything, if it is not wholly inert, must have a definite limited range of therapeutic applicability, and with reference to such article, all experimentation and reasoning should be directed towards the accurate determination of what it can do and in what manner its effects are produced.

Carbolic Acid enjoys an "extraordinary reputation," that, as Gubler has well said, "is less due to its proper value, which, however, is very real, than to the simultaneous efforts of certain of its admirers." It is not my purpose to specify in detail the several affections in which it has been employed,

for it may safely be declared that there is not a single surgical disease or injury in the treatment of which Carbolic Acid has not been used; either where there has been no necessity for an operation, or prior to, at the time of, or subsequent to the performance of such operation.

Classifying its varied applications, it has been used for *six* purposes. 1. As a *deodorizer;* 2, as a *local irritant;* 3, as a *caustic;* 4, as a *destroyer of parasites*, animal and vegetable; 5, as a *preventive of inflamation and suppuration;* 6, as a true *antiseptic*, preventing and arresting putrefaction, and protect- from the evil influences of specific miasms.

As a *deodorizer* it is powerless, since it does not effect a decomposition of fetid gases. Repeated experiments have shown that while it may mask their odor, it cannot break up the offensive combinations of H. S. C. P. & N., with the single exception that it will somewhat absorb gaseous Ammonia. Fortunately, "it so happens that the stinking gases of decomposition are of little or no danger in the atmosphere," and we have agents that will chemically destroy these "comparatively harmless," though extremely unpleasant, products. Indirectly, however, Carbolic Acid is of great value as a deodorizer, since in virtue of its antiseptic power it arrests the putrefactive changes, so that while it cannot affect the fetid gases already set free, these are soon so mingled with the atmospheric mass that, no more being thrown off, practical deodorization is effected.

As a *local irritant* it has not been to any great extent employed, its chief merits in this respect consisting in the length of time during which the irritant action is maintained, and the peculiar absorbative influence that seems to be exerted by it upon specific indurations. Respecting the first of these, Lemaire states that a single application of the Acid is sufficient to keep up a congestion of the skin for from fifteen to twenty days without any inflammation resulting, a less degree of rubefaction and that of less prolonged continuance being produced by the use of a strong Alcoholic solution. That it exercises a decided influence upon the rapidity of the removal

of syphilitic indurations, we have strong testimony from Neuman, and further investigations may show that a similar influence is exerted by it upon indurations and glandular enlargements of non-specific origin. Care, of course, must be taken that when used as a rubefacient the Acid shall be applied for so short a time or in such dilution that it shall not exert a caustic power.

As a *caustic* it is more energetic than the Nitrate of Silver, less so than Nitric Acid, Bromine and the caustic preparations of Mercury, Potassa and Lime. It coagulates albumen but such coagulation is only superficial. Employed in full strength it neither oxidizes or de-oxodizes, except that, as we shall see hereafter, under certain circumstances, a de-oxodizing influence upon the sulphur compounds may be exerted by it. It has some excellencies as a caustic, since it is easily graduated in strength, its effect is limited to the area to which it has been applied, and the resulting "eschars are small and unaccompanied by true suppuration."

At the "International Medical Congress," held at Florence in September last, attention was called by Paventa, to the beneficial effects resulting from its application to carcinomatous growths.

In the *treatment of parasitic skin diseases*, the acid has been largely employed and the general testimony is in its favor as a readily applied and powerful parasiticide, having no greater and in some affections less value than other and longer employed agents exerting a destructive influence upon the parasite, or changing for the better, the character of the nidus in which the vegetable disease producing organisms, are developed.

The fifth and sixth purposes for which the acid has been employed i. e. to repeat, for the *prevention of inflammation and suppuration*, and as an *antiseptic* are by far the most important, and if both or either is accomplished a "very real" value of the agent is established. Into the production of an inflammation of any given part, three factors enter, the nerves of the part, its blood vessels, and the reciprocal influence of

the tissues without, and the nutrient fluid within the vessels. The nerves concerned belong to both the vaso-motor and the cerebro spinal systems. It has been shown that when the vaso-motor nerves have been paralyzed, there results, " dilatation of the blood vessels, afflux of blood and increase of vital properties." While excitation or stimulation of such nerves causes " contraction of the vessels, diminution of blood, and decrease of vital properties." Any agent then that being applied to a part, excites the vaso-motor nerves, or causes mechanical contraction of the blood vessels, or lessens or arrests the molecular motions in the tissues of the part, and their supplied pabulum, must so far act as anti-inflammatory. It has been repeatedly demonstrated, that upon the application of Carbolic Acid, the vaso motor nerves are stimulated, the calibre of the vessels diminished, (directly by the cauterization of their walls, indirectly through nervous influence,) and intra and extra vascular molecular motions lessened or altogether arrested. If the primary stimulation produced by the acid, can be so graduated as that there shall not follow a morbid paralysis of the vaso-motor nerves, there can be no question but that this agent may be so employed as not to *cause* inflammation. But will it act *positively* as well as *negatively*, will it *prevent* inflammation or *arrest* it if already in progress? In what way can inflammation arise or continue in a part supplied with a less than normal amount of blood, and where there is to a cetain extent, a prevention of those molecular movements by which the nutrition of the part is secured. If Carbolic Acid can put a part in this condition without too great reaction following, it must have the power to prevent and to arrest the inflammatory process.

But what is of much more practical importance, can an external wound by the use of the acid be made to heal by granulation without suppuration? Undoubtedly such result has been secured under the Carbolic Acid treatment, and that too in wounds of a character such that ordinarily abundant pus-formation occurs. If this result be due to the employment of the acid and not to outside hygienic influences, and special

care taken in cleansing the wound and excluding all irritating substances, how has the acid acted. "Suppuration is always due to excessive stimulation." If by over excitement of the nerves, there has been produced a paralysis of the vaso motor distribution of the part, any resulting suppuration is inflammatory in its character. The pus-corpuscles (considering the three now most prominent theories of their nature and origin,) are either (1) directly derived from pre-existing connective tissue or epithelium corpuscles, or (2) result from the growth or aggregation of germinal matter developed from any tissue or granular matter spontaneously appearing in an oleo-albuminous fluid, or (3) are nothing more nor less than migrated white blood corpuscles. If they are but the too rapidly formed and imperfectly developed cells produced by the proliferation of connection tissue corpuscles, Carbolic Acid in preventing their formation must act by lessening excessive stimulation. This it may do through its influence upon the nerves of the part, causing a diminution of the amount of blood supplied and consequently the rapidity of its nutritive changes, or by the superficial coagulation it produces, which in a degree excluding the air, renders the wound somewhat akin to a subcutaneous one. This connection-tissue theory, not long since so generally accepted, is now adopted by but comparatively few pathologists. In studying the phenomena of many recent experiments very careful observers have noticed much the same condition of part, as has lately been recorded by Hayem, who "in an inflamed mesentery found the epithelial layers and the conjunctive tissues almost perfect, the epithelial covering remaining inactive during the process of inflammation and being penetrated by the leucocytes."

Upon the molecular growth or aggregation theory, pus originates in granular matter, spontaneously appearing in an "oleo-albuminous fluid," or is developed from germinal matter already present in, and constituting the essential vital element of the nutrient fluids and the various tissues; such granular or germinal matter as the result of abnormal stimulation re-

ceiving too much pabulum, and being too rapidly developed to contribute to healthy growth and repair. The acceptors of this theory must explain the favorable action of the Acid, either by the diminution it causes in the amount of nutritive fluid conveyed to the part, or by its power of coagulating albumen and thereby arresting all molecular motions. The latter seems to be the view adopted by all. Onimus whose experiments were made with the "clear serum from a blister placed in a bag of gold-beaters skin and put below the skin of a rabbit so as to be exposed to warmth and endosmotic currents." He found that even after the serum had been filtered "bodies like pus-corpuscles or the colorless cells of the blood, (i. e. leucocytes)" arose "spontaneously by molecular deposition" so long as coagulation of fibrin (?) did not occur, and declares that "all substances which produce coagulation, such as Alcohol, Corrosive Sublimate and Iodine, (to which we may add Carbolic Acid,) prevent such formations."

If we accept the remaining one of the three before mentioned theories of pus-formation, viz: that the pus corpuscles are but migrated white blood-cells, which have escaped through the stomata of the vessel walls, we can readily enough understand how Carbolic Acid may prevent suppuration. By its stimulation of the vaso-motor nerves, and its direct caustic action, it lessens the calibre of the vessels, thereby contracting the stomata, and diminishes the amount of blood circulating in the vessels, and necessarily the number of white corpuscles liable to migrate; and in virtue of its power to arrest molecular and corpuscular motion, it must check those *amœboid* movements of the white blood-cells by means of which they effect their passage from within to without the vessels. The truth of this theory at least so far as indicating one origin of pus-cells, is being more and more established as experiments are multiplied.

But if on any one of these theories we can found an explanation of the anti-suppuration influence of the Acid, how does it happen that suppuration is prevented in comparatively but

few cases, and those to a great extent occurring in the practice of a few individuals? For the simple reason, say these individuals, that in the vast majority of cases the Acid is not properly applied. If applied, say they, directly to the wound and in strong solution it will, in very many cases, so abnormally and directly stimulate the injured tissues that there will be induced what Lister has styled the "Antiseptic Suppuration," "non-inflammatory in its character, affecting only the parts primarily excited, diminishing in amount as the serous discharges dilute the Acid, and soon ceasing altogether not to be re-established if proper treatment is followed." The Acid dressings must, as far as possible, exclude the air, for air is a stimulant of wounds, and if pus is developed putrefactive changes will likely be produced in it. If "Antiseptic Suppuration" ensues, exit must be given to the pus, and the wound thoroughly cleansed under protection of the Acid; the surrounding atmosphere must be kept constantly charged with the Acid vapor that putrefaction may be prevented. Adopting these precautions, viz: keeping the wound clean, shielding it from direct contact with the Acid, protecting it as perfectly as may be from the air, and disinfecting what air does reach it, then, say the strong advocates of the Carbolic Acid treatment, the wound may be expected to and will unite without suppuration.

But if the wound be treated in precisely the same way, except that no Carbolic Acid is used, will not a similar good result very many times be secured? Has not such a result been obtained when the catacleistic method has been adopted, the wound readily cicatrizing without suppuration beneath its artificial crust. An extended series of parallel experiments with and without the Acid can alone determine how much real beneficial influence is exerted by it. The consideration of theories may enable one to understand how such influence, if it exists, arises, but this by no means proves that such influence really is exerted.

Even more important than its use as an anti-inflammatory and anti-suppurative agent is its employment for the *preven-*

tion and arrestation of putrefaction, and the *destruction of animal miasms.* Every one knows the very grave character of the diseases developed in consequence of putrefactive changes, and those dependent upon the reception of contagious elements from without; and how great is the mortality in surgical practice from *pyæmia*, *hospital gangrene*, *erysipelas*, and *exhaustion consequent upon long continued putrefactive suppuration.*

Putrefaction may be explained upon either of two theories. The one maintains that dead nitrogenous matter being exposed to the action of air or oxygen in the presence of little moisture, undergoes a chemical change being reduced from its original complex constitution to a more simple one. Such decomposition having once commenced is propagated from molecule to molecule until the entire dead mass is affected, and this mass, acting as a ferment, excites putrefactive molecular motions in the living tissues with which it is in contact. The other theory declares that it is not the air nor oxygen that sets up the putrefactive process, but the action of certain organisms, the germs of which are under ordinary circumstances always floating in the atmosphere. The earliest developed of these organisms have, as their special office it would seem, the taking up of oxygen from the substance that is to undergo putrefaction. This office having been performed and all the oxygen removed these monads and bacteria die, and if vibrio germs be present they are in turn developed and putrefaction takes place. Without the vibrios putrefaction cannot occur and vibrios can live only in the absence of oxygen, hence the necessity for the precedent removal of this element by the monads and bacteria.

Which of these two theories, the chemical one of Liebig or the germ theory of Pasteur, is the true one, is a question at present *sub judice.* Some very eminent investigators have, as the result of their experiments, found that putrefaction does occur in fluids subjected to the influence of only heated and filtered air. Pasteur's essential putrefaction producing germs, the *monads*, *bacteria and vibrios* are, some maintain,

but varieties of a single organism, not received from without, but originating where found and formed by a peculiar aggregation of spontaneously developed molecules. In the opinion of others, again, the three organisms referred to, while not the cause of putrefaction are yet powerful in continuing it, since by their vital actions they increase the over stimulation of the part in which they are found.

Upon the chemical theory the antiseptic action of Carbolic Acid must be explained by its arrestation of molecular motions through its coagulation of albumen, for it is well known that when this change in albumen has taken place and the expressed water been removed by ordinary evaporation or heat, putrefaction is long delayed.

Acceptance of Pasteur's theory has certainly had more to do with the introduction and varied applications of Carbolic Acid in surgical practice, than all other causes combined. No fact with reference to the properties of the Acid is better established than that it is destructive to all low forms of organic life, so much so that it has been proposed as the "test proper for distinguishing vital from purely physical phenomena." If, then, putrefaction is excited solely by the presence, multiplication and development of organic germs, Carbolic Acid is *the* anti-putrescent *par excellence.* Neither monads bacteria nor vibrios can live in its atmosphere. All that is required to prevent putrefaction, either of a part deprived of its vitality, or of a discharge from an open wound, is, it is claimed, to let no air reach either part or wound that has not been so subjected to the influence of the Acid as to insure the destruction of all germs contained. Under the protection of this antiseptic, the cold abscess may be safely opened, and its speedy closure secured, the compound fracture treated as successfully and with as little danger of purulent infection as the simple fracture, the dead tissue, soft or hard, restrained from undergoing decomposition, made to contribute to the nutrition of the living tissues adjacent, and the system at large. All this may be accomplished by the proper use of

Carbolic Acid, if it can be shown that putrefaction is not a change spontaneously developed, nor due to the action of a ferment, but to the result only of the admission of organic germs from without.

Admitting, for the moment, the truth of all that is claimed by the theory of Pasteur and for the Carbolic Acid treatment, the same question may be asked as before, how does it happen that the stated good results are obtained in comparatively few cases, and those, for the most part, in the practice of but a few individuals. The same answer has been given as before, because the Acid is not properly used. The wound must very early be subjected to treatment, and the Acid must be applied to every portion of it. If any one of the organic germs are left undestroyed, the result will be as unfavorable, or nearly as much so, as if the Acid had been omitted altogether. Not a particle of undisinfected air must be suffered to reach the wound at any time before its complete closure. To make sure of all the good that the Acid is capable of accomplishing (say its stringent supporters) its use must be faithful, thorough and unremitting. It is certain that those who have had the most confidence in the Acid, and have the most thoroughly used it, have had the largest measure of success in their treatment by it of grave surgical diseases and injuries.

The deadly action of the Acid on living organisms, and its power to retain molecular motions have, since its earliest use, attracted attention to its employment for the destruction of those contagious elements, whatever they may be, that as the *causae causantes* of erysipelas and hospital gangrene have at times proved so destructive of part and life, and so greatly increased the risk and mortality of accidents and operations. The spread of either of these diseases depends, it is highly probable, upon some peculiar contagion that, thrown off from one patient, is transmitted to another; and the only rational idea that can at present be entertained of the nature and origin of such contagion is, that it is a living something, organism, cell, or germinal matter, or is a specific con-

dition of fermentation set up in and by the emanations from patients laboring under these diseases. So, too, the injurious effects of overcrowding, and defective ventilation, are in a great degree consequent upon those animal miasma that are constantly being thrown off from the healthy, and still more the diseased body. Carbolic Acid is highly volatile, is soluble in water, and can, therefore, be readily conveyed wherever water-vapor can penetrate. In the proportion of 1 part to 500 or 1,000 of water it arrests "putrid fermentation," and in one per cent. solution destroys small animals. Such an amount of its vapor in the air as was not in the least harmful to the cattle breathing it, seemed to prevent the contagious elements of the rhinderpest from exerting their injurious influence.

Only extended investigations can determine whether or not the virus or ferments of human infectious maladies can be safely destroyed by the liberation of the Acid vapor in a ward occupied by the sick, or as Augus Smith has put it, "which will bar most the disease or the diseased." If it proves to be the diseased, and those whom it is desired to protect from the influence of the germs or ferments, Carbolic Acid will, on this ground alone, be an addition to the materia medica of immense value. And by its aid, some very vexatious problems with reference to hospital construction and management, may be solved to the satisfaction of the State, the profession and the sick.

Respecting the use of the Acid for the disinfection of human excreta, but little need be said. Having no true deodorizing power it must be employed simply as an antiseptic and destroyer of any disease-producing germs present. These purposes it accomplishes admirably, and, with perhaps the exception of Iodine, as suggested by Barker, better than any other agent. When, however, this disinfection is made in the presence of much water, the Acid is inferior in value to the metallic salts, and it has been observed, that an amount of Sulphureted Hydrogen is developed, indicating, perhaps, "oxidization at the expense of the sulphur compounds." The

disinfection continuing only so long as the Acid is actually present, the volatility of the Acid renders necessary a speedy removal of the excreta acted upon.

To recapitulate, as a *deodorizer*, proper, Carbolic Acid is valueless. As a *rubefacient* and *caustic* it will accomplish the objects desired, but is not likely to take the place of the well known agents ordinarily employed. As a *parasiticide* it has decided power, but will not, probably, displace the confidence of the profession in the various preparations of Sulphur and Mercury. As a *preventive of inflammation*, not dependent upon stimulation by the animal salts developed during putrefaction, its real value cannot, at present, be declared, but must be determined by time and experience. As an *anti-suppurative* agent, while it may excite suppuration by its own stimulant power, it will prevent that formation of pus which is due to the putrefactive decomposition. As an *antiseptic*, hindering the development of diseases directly or indirectly dependent upon pus changes, it is of great value, its protective influence being directly proportionate to the care and skill with which it is employed. As a *destroyer of specific viruses and ferments* it may be used with great confidence, and will, probably, prove to be possessed of much of the power in this respect that has been claimed for it. As a *sick-room disinfectant* its action is certain and powerful, and it can be easily and safely employed.

Three objections exist against its use upon and about the subjects of surgical treatment, viz: the odor of the Acid, its unfavorable influence upon granulations, and the danger to life in its employment. To many persons the odor is intensely disagreeable, and it is doubtful if this odor can be removed by any combination that will not impair the therapeutical value of the Acid.

In many cases, an unhealthy condition of granulations has resulted from the use of the Acid, and there has been manifested an unusual liability to spontaneous hemorrhages, so much so as to occasionally seriously compromise life. Not infrequently cicatrization is much delayed, and in some cases

it has been found necessary to abandon the use of the Acid, in order that healing might take place.

The liabilty to the production of serious and even fatal constitutional disturbances should never be forgotten. According to Bardelebeu more or less constitutional disturbance may be expected in about one-tenth of the cases in which Carbolic Acid is to any considerable extent employed; a varying degree of spanaemia being most commonly induced. The true toxic action of the Acid, however, as has both experimentally and chemically been shown, is upon the nervous system. There is produced paralysis upon the side, to which the application has been made, dilatation of the pupils, dilatation of the blood vessels of the medulla oblongata and the spinal cord, great diminution or entire abolition of common sensibility, convulsions and death. Vomiting is very frequently induced, and after amputations, when the stump has been washed with the Acid, this vomiting has been so "persistent and uncontrollable" in its character, as "to very materially contribute to the production of speedy death."

These constitutional symptoms not only follow absorbtion of the Acid and its transmission with the blood to the nerve centres, but, as has been proved by Neuman, the nerves themselves are *a* medium, if not *the great* medium by which the influence of the Acid is conveyed to the nerve centres.

Of the organs through which the Acid is eliminated, the kidneys are those most injuriously affected. Rapidly fatal Nephritis has been developed, after the application of the Acid to a large ulcerated surface; and the very constantly observed "black urine" is due, probably, to the destruction of the blood corpuscles, hemorrhage having resulted from local irritation as well as the general spanæmic condition.

It is important to remember that it is the *superficial extent* rather than the *depth* of a wound that determines the danger of the use of the Acid; hence, it should not be employed to produce rubefaction of a large area, nor in cases of extensive destruction of the skin from burns or other injuries.

The characteristic symptoms of poisoning having manifested themselves, the use of the Acid must be at once suspended (since it is very rapidly absorbed, even through the unbroken skin) and diluents freely administered. With the elimination of the Acid, in the milder cases, the unfavorable symptoms will of themselves disappear.

Climatology and Diseases of Southeast Kansas.

BY P. BEEMAN, M. D., OF IOLA, KANSAS.

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Mr. President and Gentlemen:

A residence of three years in the central part of Southeast Kansas has served to modify, in some respects, the opinions I had formerly entertained upon the climate and diseases of that country. The south line of Kansas being on the same parallel of latitude as the south line of Kentucky, I was expecting to find the same climate in one that I would in the other. In this I was somewhat disappointed. The altitude, combined with other causes, renders the climate of Kansas colder than places of the same latitude in the Ohio Valley. I think the difference is at least equal to one and a half degrees of latitude, which will place Fort Scott on the same isothermal line as Cincinnati.

In order to institute a comparison between climatology of these two localities, with one of which the members of this Society are more or less familiar, I will introduce some statistics, derived from the records kept at the military posts at Fort Scott, and Cincinnati; and in order to explain some of the causes that serve to disturb the climate of Southeast Kansas, I will also include in them tables, statistics from the records at Fort Leavenworth, in Northeast Kansas, and Forts Riley and Larned, in Central and Western Kansas, and Fort Kearney, in Nebraska.

TABLE I.—*Latitude, Longitude, Altitude, and Mean Temperature, for Seasons and Years.*

	Latitude.	Longitude.	Altitude.	Spring.	Summer.	Autumn.	Winter.	Year.	Maximum.	Minimum.	Range.
Cincinnati.....	39.05	84.29	500	53.80	73.70	53.60	33.80	53.70	106	—.17	123
Fort Scott.....	37.45	94.35	1,000	54.75	74.95	55.27	32.93	54.48	98	—.10	108
Fort Leavenworth.	39.21	94.44	896	53.76	74.05	53 66	29.76	52.81	108	—.30	138
Fort Riley.....	39.00	96.30	1,180	55.85	79.12	56.09	29.98	53 47	106	—.23	129
Fort Larned.....	38.15	99.20	1,780	50.76	77.43	54.34	32.12	53.66	.....	.....	.....
Fort Kearney.....	48.38	98.57	2,360	46.81	71.47	49.35	23.04	47.66	102	—.28	130

This table gives the latitude, longitude, altitude, mean temperature for seasons and years, maximum and minimum, and range of temperature at each of the places named.

By analyzing this table, we discover that the mean temperature for the entire year is a little higher at Fort Scott than at any of the other places indicated, being about three-fourths of a degree warmer than at Cincinnati, all the others being somewhat colder; Fort Kearney being much colder than either of the others, as might be expected, the altitude as well as the latitude being so much greater.

If we compare S. E. Kansas, as represented by Fort Scott, with Southern Ohio and Kentucky, as represented by Cincinnati, we shall find that during the three spring months the average temperature in Kansas is nearly one degree warmer than in Ohio and Kentucky. During the three summer months a little over one degree, and autumn nearly two degrees warmer; while our winters are nearly one degree colder than at Cincinnati.

By examining the columns representing the maximum and minimum temperature of these two places, we find the warmest days at Cincinnati marked 108 degrees, at Fort Scott 98 degrees, or 10 degrees less than at Cincinnati.

The coldest days at Cincinnati were 17 degrees below zero, at Fort Scott 10 degrees, Cincinnati being 7 degrees colder than Fort Scott.

The range of the thermometer being in Southeast Kansas 108 degrees and in Ohio 123 degrees.

Thus it will be seen that although the mean temperature is in Southeast Kansas higher in summer, and lower in winter than in Ohio and Kentucky, yet we never have as warm days in summer or as cold in winter.

By instituting a comparison between Southeast, and other portions of Kansas, we find the difference much greater than between it and Ohio.

At Fort Leavenworth, in Northeast Kansas, about one hundred miles north, the mean temperature for each of the four seasons of the year is considerably lower than at Fort Scott, the greatest difference being in the winter; yet they have days in summer 10 degrees hotter, and in winter 20 degrees colder, than are ever witnessed at Fort Scott, the range being 30 degrees greater.

At Fort Riley, on nearly the same parallel of latitude, and west about 2 degrees, with an altitude about three hundred feet greater, the springs, summers, and autumns are warmer than at Fort Scott, yet the winters are far colder. The warmest day being 8 degrees warmer, and the coldest 13 degrees colder, the range being 21 degrees greater.

At Fort Larned, about fifty miles north, and some three hundred west, with an altitude nearly eight hundred feet greater, while their autumns and winters are of about the same mean temperature as at Fort Scott, their springs are 4 degrees colder, and their summers 2½ degrees warmer.

At Fort Kearney, in Nebraska, about two hundred miles north, and two hundred and fifty west from Fort Scott, with an altitude thirteen hundred and fifty feet greater, the mean temperature during the spring is 8 degrees lower, during the summer 3½, during the autumn 6, and during the winter nearly 10 degrees lower than at Fort Scott; and yet the warmest days are 4 degrees warmer, and the coldest 18 degrees colder, the range being 22 degrees greater.

It is thus seen that while N. East, Central and Western Kansas, have greater extremes of heat and cold than Southern Ohio, Southeast Kansas, alone, is free from these great extremes of temperature.

Why Southeast Kansas, surrounded by countries subject to such great extremes of temperature, should remain free from them itself, would be perhaps difficult to determine. And not less difficult would it be to decide why at Fort Riley, so much farther north, and so much more elevated, with winters so much colder, they should have springs, summers and autumns so much warmer; or why even at Fort Kearney, the farthest north, and most elevated of all, with a lower mean temperature during every month of the year, they should still have some days hotter than are ever witnessed at Fort Scott. These are questions the solutions of which I shall not attempt; and yet there can be no doubt that our climate is greatly influenced by these surrounding circumstances; and although they never produce the great extremes that are witnessed in other parts of the State, and the States adjoining, yet within its own range of temperature, they render it subject to frequent and sudden changes, which are sometimes far from agreeable.

Before leaving the subject of temperature, I will introduce a few tables relating to the springs and autumns; for these are the seasons of the year when great extremes of heat and cold are most severely felt, and their effects most frequently injurious.

TABLE II.—*Highest and Lowest Mean Temperature ever observed in each month.*

	MARCH.					APRIL.					MAY.				
	Highest Mean Temperature.	Lowest Mean Temperature.	Range.	Date of Highest.	Date of Lowest.	Highest Mean Temperature.	Lowest Mean Temperature.	Range.	Date of Highest.	Date of Lowest.	Highest Mean Temperature.	Lowest Mean Temperature.	Range.	Date of Highest.	Date of Lowest.
Ft. Leavenworth...	53.4	17.4	36.0	1842	1843	64.0	45.0	19.0	1839	1850	67.1	59.3	7.8	1833	1837
Ft. Riley	52.4	38.1	14.3	1860	1856	63.4	53.3	10.1	1855	1862	73.3	59.9	13.4	1860	1857
Ft. Kearney	45.7	31.7	14.0	1860	1850	54.3	37.7	16.6	1855	1857	65.4	53.5	11.9	1860	1853
Ft. Scott	49.3	24.5	24.8	1849	1843	63.2	48.5	14.7	1844	1850	69.5	61.5	8.0	1851	1847
Cincinnati	52.5	28.8	23.7	1842	1843	64.2	48.3	15.9	1844	1837	67.0	56.7	10.3	1846	1838
St. Louis	57.8	25.5	33.2	1842	1843	65.6	45.5	17.1	1845	1850	73.7	57.5	16.2	1829	1838

This table gives the mean temperature during the coldest as well as the warmest of each of the spring months at each of the places mentioned, the year in which they occurred, as well as the difference between them.

What appears to me very remarkable and even unaccountable, is the fact, that at Fort Riley the mean temperature during the month of March is not only higher than at Fort Scott, or Cincinnati, but that they never have as cold Marches as at the latter places; the mean temperature during the coldest March on record being at Fort Riley 38 degrees, at Cincinnati 28 degrees, and at Fort Scott 24 degrees. And even at Fort Kearney, nearly two hundred miles north of Fort Scott, with an altitude of 2,360 feet, the coldest March on record had a mean temperature 3 degrees higher than the coldest at Cincinnati, and 7 degrees higher than at Fort Scott. The difference also between the temperature of their coldest and warmest Marches is also much less, being at Fort Riley and Fort Kearney but 14 degrees while at Cincinnati it is 23 degrees, and at Fort Scott 24 degrees.

TABLE III.—*Mean, Maximum and Minimum Temperature.*

	MARCH.			APRIL.			MAY.		
	Mean Maximum.	Mean Minimum.	Range.	Mean Maximum.	Mean Minimum.	Range.	Mean Maximum.	Mean Minimum.	Range.
Fort Leavenworth	73	13	60	81	28	53	85	41	44
Fort Riley	77	15	62	87	27	60	89	43	46
Fort Kearney	70	7	63	80	21	59	86	32	54
Fort Scott	73	13	60	82	29	53	86	39	47
Cincinnati	69	19	50	82	31	51	84	41	43

This table exhibits the mean maximum and minimum temperature, calculated from the extremes of each month for the whole number of years, and therefore gives the extremes of temperature that may be expected to occur, each year. It

also reveals the fact that the range of temperature during each of the three spring months is usually less at Cincinnati than at any of the other places indicated in the table; and also that Forts Riley and Kearney, although they never have as low a mean temperature during the month of March as is sometimes found at Cincinnati and Fort Scott, yet they usually have a much greater range of temperature during the month.

TABLE IV.—*Highest and Lowest Temperature ever observed, and the date of each.*

	MARCH.				APRIL.				MAY.			
	Maximum.	Minimum.	Date Max.	Date Min.	Maximum.	Minimum.	Date Max.	Date Min.	Maximum.	Minimum.	Date Max.	Date Min.
Fort Leavenworth	85	4	1852	1843	96	15	1855	1854	90	32	1850	1850
Fort Riley	85	5	1854	1855	95	18	1855	1857	99	37	1856	1857
Fort Kearney	82	4	1853	1857	92	10	1855	1857	94	26	1856	1857
Fort Scott	87	10	1852	1848	87	22	1843	1851	90	31	1852	1851
Cincinnati	82	4	1851	1858	89	21	1855	1857	90	31	1851	1851

From this table it appears that although, as stated before, we never have as cold days in winter, or as warm days in summer, in Southeast Kansas, as you do in Southern Ohio and Kentucky, yet, during the spring months, and especially during the month of March, we have both hotter and colder days, the hottest day at Fort Scott being five degrees hotter than the hottest ever recorded at Cincinnati, and the coldest six degrees colder.

In fact, an examination of these tables will show that all parts of the State of Kansas and the States adjoining are subject to greater extremes of heat and cold during the spring months, than the States farther east.

TABLE V.—*Gives the Mean Maximum and Minimum Temperature for the three Fall months, September, October and November.*

	SEPTEMBER.			OCTOBER.			NOVEMBER.		
	Maximum.	Minimum.	Range.	Maximum.	Minimum.	Range.	Maximum.	Minimum.	Range.
Fort Leavenworth	90.7	44.1	46.6	83.0	27.4	55.6	67.5	14.5	53.0
Fort Riley	94.6	44.6	50.0	82.6	32.0	50.6	69.0	14.5	54.5
Fort Kearney	83.1	34.0	49.1	84.4	19.8	64.6	63.4	9.0	54.4
Fort Scott	92.1	40.7	41.4	84.4	27.8	56.5	72.8	15.7	57.1
Cincinnati	88.6	48.8	39.8	77.5	33.7	43.8	68.5	26.8	41.7

As this table gives the mean maximum and minimum temperature, calculated from the extremes of each month, during the whole series of years, it gives the range that may be expected each year, and it shows that during each of the autumn months, as well as during the spring, the temperature is much more uniform at Cincinnati than at any of the other points mentioned. Although these tables of statistics indicate a greater range of temperature in Kansas than in Ohio and Kentucky, yet they by no means give you a correct idea of the difference. It is not so much the greater range of temperature as it is the suddenness of the transitions from one of these extremes to the other that gives to our springs and falls their most unpleasant feature. A change of temperature of forty degrees in twenty four hours is by no means an unusual occurrence during the months of March and November, or during any of our winter months, and I have, on several occasions, known as great a change within one-fourth that time.

Dr. Tiffin Sinks, of Leavenworth, in his report accompanying Professor Swallow's "Preliminary Report of the Geological Survey of Kansas," says: "At 12 A. M., November 25, 1864, the sun was shining brightly and the thermometer stood at 50 degrees. At half-past twelve the wind suddenly veered to the northwest and swept down with a freezing temperature. At 12 P. M. the mercury had descended to 4 degrees above zero."

Here was a change of 46 degrees in 12 hours. Although this was a very great and unusual change; yet changes equally sudden, though not quite so great, are of common occurrence all through our springs and autumns.

And what makes these sudden and extreme changes from heat to cold, so much the more keenly felt, and their destructive effects upon vegetation so much the greater, is the wind that invariably attends them. And here I am reminded that my report of the climatology of the country would be very imperfect, did I not devote a short space to the consideration of

WINDS.

"The geographical position of the State—its proximity to the plains—its exposure to the cold currents from the Rocky Mountains, and the warm ones from the Gulf of Mexico, the conflict of these with the great normal west wind of the temperate latitudes, all combine to produce confusion from which it is almost impossible to eliminate anything that may be called general. All points of the compass are represented, and quite frequently during the same day."—*Sinks.*

Southerly winds prevail during the summer; northerly and southerly being about equal, and frequently alternating during the other seasons. East and west winds are by no means uncommon during the summer.

It is a very common thing for the winds to blow continuously, and with great force for several days in succession, from the same points of compass, and not a cloud visible at any point. It is generally said that when it blows in this manner for three or four days in succession from the south, it is usually followed by rain, and this is frequently the case, though not invariably. When this does occur, the rain is almost invariably precipitated from clouds passing in an opposite direction.

It is a common expression among the citizens, that "the showers come up against the wind." It is by no means unusual for different currents to be blowing from different points of compass at the same time, as shown by the lower

stratum of clouds passing in a direction opposite to those more elevated, while a strong current sweeps the surface of the prairie in a direction different from either. The atmosphere is constantly in motion, so that a still day is a great rarity. It is no unusual thing, however, for the wind to subside in the evening, so that the night is comparatively quiet. These winds add much to the severity of our winters, while on the other hand, they greatly modify the heat of our summers.

During my residence in the country, I have never known a wind to produce a sensation of heat, although I have been informed by those who have resided there longer, that such has occasionally been the case. Dr. Sinks says: "On the 9th of July, 1860, from 10 o'clock in the morning until 6 o'clock in the evening, a dry hot wind blew from the southwest, varying in temperature from 108, to 112 degrees, Fahrenheit. A similar hot wind came from the same quarter September 2d, 1864. This temperature, however, was only manifested when the thermometer was exposed to the direct current of air. During this time the clouds were traveling in an exactly opposite direction, and apparently quite low."

Although these phenomena have undoubtedly occurred, yet they are certainly not often witnessed.

The facts which I have here produced, show that persons emigrating to the west, particularly to Kansas; must go farther south to find the climate they desire, than they would in the longitude of Ohio.

Leaving now the subject of temperature, we will consider briefly that of moisture.

As the impression that Kansas is more subject to droughts than any other part of the country, has pretty generally obtained credence, I will introduce some statistics upon the subject, that we may have some data, upon which to form our opinions.

TABLE VI.—*Mean Precipitation of Rain, Calculated for Seasons and Years.*

	Winter.	Spring.	Summer.	Autumn.	Year.
Fort Leavenworth	3.41	7.32	13.03	7.67	31.34
Fort Riley	2.72	5.62	10.68	5.87	24 90
Fort Scott	4.79	12.57	16.37	8.39	42.12
Fort Larned	81	5.36	8.45	4.01	18.63
Fort Kearney	1.50	6.80	10.62	4.85	23.77
Cincinnati	11.15	12.14	13.70	9.90	46.89

This table gives the number of inches of moisture precipitated in the form of rain and snow.

In comparing the amount precipitated at these different points, we will let 100 represent the amount that falls at Cincinnati during the year. Then the amount that falls at Fort Scott will be 90; Fort Leavenworth, 66; Fort Riley, 53; Fort Kearney, 50; Fort Larned, 39.

If we take the number of inches which fall during each season, discarding fractions, we find that during the three spring months there is precipitated at Cincinnatl, 12; Fort Scott, 12; Fort Leavenworth, 7; Fort Kearney, 6; Fort Riley 5; Fort Larned, 5.

The amount that falls at Fort Scott and Cincinnati being equal, all the others being much less, most of them less than half.

During summer, the amount that falls at Fort Scott is 16 inches, Cincinnati 13 inches, Fort Leavenworth 13 inches, Fort Riley 10 inches, Fort Kearney 10 inches, Fort Larned 8 inches—considerable more falling at Fort Scott than at any other point, while Cincinnati and Fort Leavenworth are equal, all the others being much less.

During autumn, there is precipitated at Cincinnati 9 inches, Fort Scott 8 inches, Fort Leavenworth 7 inches, Fort Riley 5 inches, Forts Larned and Kearney, each, 4 inches, showing that a little more falls at Cincinnati than at Fort Scott, the others being far less.

But it is during the winter months that we notice the greatest difference; for while at Cincinnati the amount precipitated is almost equal to that of summer, at Fort Scott and Fort Leavenworth it is but little over one-fourth, at Fort Kearney less than one-sixth, and at Fort Larned less than one-tenth the amount that falls at these places, respectively, during the summer; and what falls at Cincinnati, during the three winter months, is nearly two and one-half times the amount that falls at Fort Scott, and over thirteen times what falls at Fort Larned during the same time.

The mean annual precipitation of rain in Minnesota is 30 inches, Wisconsin 32 inches, Michigan 30 inches, Northeast Kansas 31 inches, and Southeast Kansas 42 inches.

This shows that the amount of rain that falls in Southeast Kansas is not only much greater than that of other parts of the State, but equally as much greater than that of several other western States, and, with the exception of the winters, it is even greater than in Ohio and Kentucky.

The inhabitants of the country look with great favor upon these dry winters. The roads are in good condition the entire winter, when a great part of the freighting is done; the ground is not covered with snow so as to prevent stock from grazing; the grass left standing on the prairie will retain much more nutriment than if it were continually soaked with rain; and the frequent changes of temperature are much more easily borne in a dry than in a damp atmosphere, so that stock of all kinds will frequently live the entire winter with no attention whatever from their owners, particularly near the south line of the State; and emigrants can live in much less perfectly constructed dwellings.

I should not be doing justice to my convictions of truth, however, were I to convey the impressions that we are less subject to drouths than you are in Ohio, as these statistics would seem to show; for although there is usually more rain precipitated during the spring, summer and fall, yet my own observations, and the statements of older residents, lead me to believe that it is not so equally distributed through these

seasons, long dry periods and long wet ones being more frequent.

While upon the subject of moisture we must not omit the subject of dew. Though our nights are usually cool, yet there is comparatively very little dew deposited. This is doubtless mainly due to the dryness of the atmosphere, yet doubtless the wind has some influence.

The diseases of Southeast Kansas differ but little from those of Ohio. I have found no new diseases; none with which I was not already familiar. Malaria exerts a controling influence in nearly all the diseases of the country.

When we consider that the natural drainage of the country is among the best in the world; that there are no swamps or marshes; that the streams have deep narrow channels and rapid currents; that they seldom overflow their banks; that nearly all the streams have rocky bottoms; that there is no stagnant water; that the atmosphere is in constant, and much of the time violent motion, how are we to account for the production of malaria? It surely is not produced by "undrained marshes," for there are none in the country.

But a comparatively small part of the vegetation that grows upon the prairies is destroyed in the ordinary mode of decomposition, by far the greater portion being consumed by fire.

That the vast amount of carbonic acid suddenly thrown into the atmosphere by those fires, during the falls and winters, should have some effect upon the health of those who respire it would not appear unreasonable.

To enable us to form some estimate of the amount of this poisonous gas, thus produced, I will cite a single instance.

When, in the month of August, 1867, I passed over the country from Lawrence to Iola, a distance of over seventy-five miles of almost unbroken prairie, the whole surface of the country was covered with a heavy coat of vegetation; the prairie grass forming a dense mass, from three to six feet in height, which, when cut and dried, must have averaged more than two tons to the acre.

A few days after this, a fire commenced in the north part of Anderson county, and soon spreading out, east and west, to a breadth of more than ten miles, swept down in a southerly direction into the north part of Allen county, a distance of more than twenty miles; thus consuming, in a little over twenty-four hours, almost every particle of vegetation from over two hundred square miles. Estimating the amount of carbon thus consumed at one ton per acre, there must have been at least one hundred and twenty-eight thousand tons of carbon thus consumed by that fire alone. To convert that amount of carbon into carbonic acid, would require three hundred and forty-two thousand tons of oxygen, and the result would be the formation of four hundred and seventy thousand tons weight of carbonic acid. It would hardly appear possible that so large an amount of oxygen can be removed from the atmosphere, and its place supplied by such an enormous amount of poisonous gas, without producing some effect upon the health of the persons who breathe it; and yet fires of this kind are of almost daily occurrence all through the fall and winter.

If we estimate fairly the amount of vegetable matter consumed by prairie fire in the State of Kansas, we shall find that it is more than sufficient to produce 300,000 tons of carbonic acid daily for six months in the year. And the States of Nebraska on the north, and Missouri on the east, and the Indian Territory on the south, produce nearly as much.

Now, if this change in the condition of the atmosphere was productive of disease of any kind, it must have been intermittent and remittent fevers, for these were almost the only diseases that prevailed in the country during the continuance of these fires.

Whether, as Dr. Dalton supposed, it was owing to "electric changes" of the atmosphere, caused by the combustion "fixing large quantities of oxoygen;" or by the direct effect of carbonic acid in too large quantities in the atmosphere; or from some other cause as yet unascertained, certain it is that those seasons in which we have had the greatest amount

of prairie fires, have been the seasons when malarious diseases were most frequent.

The fall of 1867 was remarkable for the numerous and extensive prairie fires that prevailed, almost the entire amount of a very heavy growth of grass being consumed during the fall months; and during this time there was an unusual amount of sickness, intermittents and remittents being the prevailing forms. This was followed by a dry winter, with no fires and no sickness.

The spring and summer of 1868 were comparatively dry, the month of June being particularly so, and but a very small amount of grass grew upon the prairie until late in the season. This dry summer was followed by a warm, wet fall, with a pretty good growth of late grass. The winter was also unusually wet for that country. Owing to the short growth of the grass, and the wet weather of the fall and winter, very few fires occurred, and both the fall and winter were remarkably free from sickness of any kind.

The spring and summer of 1869, on the contrary, were very wet, and there was a very heavy growth of vegetation. About the first of September it became dry, and from that time on through the fall and winter, there was very little rain, and fires were common all over the country, though not so extensive as in the fall of 1867; so that much of the grass was left unconsumed during the fall, and consequently prairie fires were almost constantly to be seen in different directions all through the winter.

The country remained remarkably free from sickness of all kinds through the spring and summer of this year, until about the first of September, when intermittents and remittents of a very violent grade set in, and were of frequent occurrence during the fall and winter. Nor were these winter cases confined to those who had contracted the disease in the fall, for many who had never suffered from it before, and some who had but just arrived in the country were attacked, during the months of January and February.

So very common are intermittents, that many of the in-

habitants of the country purchase quinine by the bottle, and prescribe whenever any of their families show symptoms of the disease. One of our druggists, in answer to a question from me upon the subject, estimated the amount of quinine he had sold to unprofessional persons for this purpose, during the last year, at two hundred ounces.

Having observed during the last three years the frequent occurrence of malarious diseases, and at the same time finding none of the circumstances that are usually considered essential to the production of malaria; but on the other hand, observing a close connection between the fires before alluded to, and these diseases, I came at length to regard the rapid combustion of vegetable matter by fire as essentially the same as the slower combustion, that takes place in swamps and marshes, and think quite likely carbonic acid is in some way connected with the production of malaria.

If, as is pretty generally believed, it is some poisonous exhalation arising from decaying vegetation, a subtle miasm, whose presence has never been detected by the most scientific investigators, why is it that it is so much more poisonous during the night than in the day time?

Every one knows that decomposition must be much more rapid during the very hot day than in the comparatively cool night, and consequently the atmosphere in the vicinity of swamps and marshes should be much more thoroughly charged with malaria, and consequently more deleterious, during the day than at night, the reverse of which is true. Supposing, however, malaria is the same as carbonic acid, or in some way connected with it, and the case is very simple. During the day the growth of the rank vegetation in the vicinity of marshes, in warm latitudes, is very rapid, and, although there is a large amount of carbonic acid disengaged by the decomposition that is constantly going on, yet it can not accumulate in the atmosphere, for every green leaf becomes an active scavenger, removing this poisonous gas, converting the carbon into vegetable fabric, and yielding up the oxygen to purify the air and render it fit for

respiration. At night, however, it is quite different; for decomposition still goes on, and this gas now accumulates in the atmosphere, for the green leaves are not now acting the part of scavenger to remove the gas as fast as it is formed, but they are like so many open cesspools, throwing back into the atmosphere the very gas they had been removing from it during the day, often rendering it so impure that whoever breathes it dies. But, be this as it may, we have an abundance of carbonic acid, and also of intermittents. We have no marshes, but plenty of marsh fevers.

These fevers are usually more severe with us than in Ohio; requiring larger quantities of medicine to arrest them, and more frequently assuming a congestive form, and more frequently proving fatal if neglected. They also not unfrequently assume a continued form, losing their intermittent and remittent character after a few days, and soon sink into a low typhoid stage, and often pass for regular typhoid fever. In other respects I see no difference in these diseases in Kansas and in Ohio.

Pneumonia is by far the most frequent and severe of our winter diseases, and is attended with more fatality than perhaps all other diseases combined. It more frequently assumes a typhoid character with us than in Ohio; is more frequently complicated with other affections, particularly those of the stomach and bowels. Nausea and vomiting during the early stages and diarrhœa during the latter being frequent, and often troublesome attendants. The brain is usually more or less implicated, delirium being usually present during some part of the course.

During the past winter pneumonia of a typhoid grade has prevailed pretty extensively all through the State of Kansas, and was in some localities quite fatal. It resembled, in many respects, an epidemic which I witnessed in Ohio in the winter of 1841 and 1842. In both these epidemics the frequency of the pulse was an infallible index to progress and severity of the disease. In every instance so long as the pulse increased in frequency, so long the disease increased in severity; and

whenever the pulse became less frequent, the violence of the disease was invariably found to give way at the same time; and so invariably was this the case, that whenever I found the pulse, even a few beats less in a minute, than it had been on the day previous, I was almost certain from this symptom alone that the patient would recover. In no case was I disappointed. I saw no cases of relapse. As the disease subsided, the pulse became slower and slower, until in every case it became much less frequent than in health. I have, in several instances, known the pulse to fall in less than three days from 140 to less than 40 beats per minute.

In the treatment of this disease the depressing agents were not well borne. Those who resorted to bleeding, antimony and veratrum, were unsuccessful. But an early resort to counter-irritants, and a continued reliance upon tonics and even alcoholic stimulants, constituted our best chance for success.

I had many reasons for believing that this was an essential fever, in which the lungs were the parts most severely implicated; as the bowels in typhoid fever, the skin in scarlet fever, measles, &c., differing materially from that form of disease produced by atmospheric changes alone.

All the other diseases of the country, so far as I have been able to learn, are similar to those of Ohio, and need no special mention.

This hasty and imperfect sketch of Southeast Kansas will show a much greater difference between it and Ohio in climate than in diseases. In some respects the climate of Ohio is more desirable than that of Southeast Kansas, and in others it is less so. If our winds add to the severity of our winters, they modify the heat of our summers. If our winters are a little colder than yours, they are so much dryer that they are more easily borne, so that the advantages and disadvantages are about equally balanced.

And now Mr. President, if I have in these remarks dwelt mostly upon the unpleasant parts of the subject; if I have been comparing the imperfections and not the perfections,

the deformities and not the beauties, the diseases and not the health of the inhabitants, it is because the nature of the subject seemed to require it, and not because I was insensible to the beauties of nature.

The man who can not enjoy life in either Ohio or Kansas, and though he were to live a thousand times the period allotted to man, would not find life all too short to investigate the beauties and wonders of nature, is unworthy the life and intellect his maker has bestowed upon him.

REPORT OF COMMITTEE

ON

Anatomy Law for Ohio.

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ON

Anatomy Law for Ohio.

To the President and Fellows of the Ohio State Medical Society:

Your Committee, to whom was referred the matter of memorializing the Legislature, on the subject of an Anatomy law for the State of Ohio, present the following report of their doings in the premises. The Committee commenced their labors under very discouraging circumstances, it being the opinion of many of the leading men of our profession in the State, that any attempt to influence the Legislature to pass such a law was useless, and would utterly fail in its object. The Committee, however, determined to make the trial in good faith, and not without a strong hope that it would result in success. It was thought that, considering the legal status of our profession in Ohio, any measure so obviously a matter of simple even-handed justice to any class of citizens, must commend itself to any man of sufficient intelligence, to be entitled to a seat in a legislative body. Your committee with shame and sorrow confess, that they greatly over-estimated the culture, judgment, and even common sense of many of the men, whose aggregate assume to themselves the title of "the assembled wisdom of the state."

Almost immediately after the adjournment of the Society, the committee commenced its labors. After conferring together, it was determined to make no active effort until after the October election had passed, as we would then know who would represent each section of the State in the Legislature, and much good, it was hoped, would result from each physician making a direct personal appeal to his own repre-

sentatives. In the mean time the committee prepared itself for active effort when the time should arrive. The chairman, by correspondence with the different State Secretaries, obtained copies of all the existing laws on the subject in the United States. The State officials written to made prompt and courteous replies to our wishes, making no change for their trouble except in one case. The fee for copying the law of New York, was two dollars, which your chairman duly forwarded. Shortly preceding the October election, your chairman drew up, and had printed, the following memorial to the Legislature:

MEMORIAL.

To the Honorable Senate and House of Representatives of the State of Ohio:

We, your memorialists, physicians and citizens of the county of ——, would respectfully represent to your honorable body; that there is among our statutes no law, under which the study of human anatomy by practical dissections, can lawfully be pursued. That the present law, (page 437, Swan and Critchfield) which might be thought to infer the legality of such dissections, is encumbered with such provisions, as to make it totally inoperative and void for such purpose. That such a knowledge of the human frame as is necessary to the physician and surgeon, can be obtained in no other way than by such practical dissections. That a critical knowledge of human anatomy is most indispensible to any physician, who would practice his professional calling with such success as the public and the laws demand of him. Therefore, we, your petitioners, earnestly pray of your honorable body, to pass such a law as shall legalize the dissection of human bodies in our medical schools, and in such other places and under such regulations and restraints, as your wisdom may deem proper. Also to point out the manner of obtaining material for such dissections, so that public decency shall not be outraged, and the medical profession be relieved from the

necessity of violating the law, and for such action on the part of your honorable body, we your petitioners will ever pray, etc.

Accompanying each memorial, and addressed to the person to whom it was sent, was the following circular letter:

CIRCULAR.

DEAR SIR:—At a meeting of the Ohio State Medical Society, held in Columbus, Ohio, on the 8th day of June, 1869, the undersigned were appointed a committee to memorialize the Legislature, on the subject of a law to legalize dissections in the State of Ohio. The committee were instructed as far as practicable, to secure the signature of every physician within the State. We therefore send you the accompanying memorial, and appeal to your interest in the progress of medical science, to secure the signature of every regular physician in your county, and such other influential persons as you may deem proper. The propriety of making a personal appeal to your Representatives, is also worthy of consideration. We believe we can succeed, if we make an earnest and persistent effort. This memorial with signatures, should be forwarded to your Representative in the Legislature, some time in January next.

Respectfully yours,

O. G. SELDON, M.D., Shanesville, O.
E. W. HOWARD, M.D., Akron, O.
ISAAC KAY, M.D., Springfield, O.
Committee.

It is believed by your committee, that a copy of the fore. going documents was sent into every county in the State, and addressed to some influential and reliable physician. If any county failed to receive an invitation to join in this movement for the interest of medical progress, the committee beg leave humbly to apologize for the apparent neglect, and assure its medical fraternity that the error was purely unintentional. It was certainly the intention to invite all to co-operate with and assist us. The profession throughout the State responded to the call with praiseworthy alacrity,

and it is believed that nearly or quite every petition sent out, eventually reached the General Assembly, more or less numerously signed.

Previous to the meeting of the Legislature, it was thought best by your committee, after conference with one another, to address Gov. Hayes on the subject of our movement, setting forth to him the nature of our petition, and our reasons for so memorializing the General Assembly. In obedience to the wish of a majority of your committee, sometime in December, your chairman drew up the following address to Gov. Hayes:

To His Excellency Rutherford B. Hayes, Governor of the State of Ohio:

SIR:—At the last meeting of the Ohio State Medical Society, held in Columbus on the 8th, 9th and 10th of June, 1869, it was unanimously resolved to petition the Legislature of the State, to pass a law which should make legal the dis section of human bodies, under certain proper restrictions, and also to provide for obtaining material for such dissections, in a lawful manner. The undersigned were appointed a committee to draw up and circulate petitions, and present our case to the Legislature.

As the Chief Magistrate of our State, the committee have thought proper to address you as follows, believing that you will feel an interest in promoting the success of any measure, that has for its intimate object the good of all classes of citizens. And not only as Chief Magistrate do we address you, but as one known to us as a gentleman of enlarged and liberal views, who will without prejudice listen to a recital of the claims of any class of citizens.

The necessity of a medical profession, or that in every State and community a certain class shall give their chief attention to the preservation of the general health, and the care of the sick and afflicted, has been acknowledged in all ages, and among nations of all grades of civilization, from the remotest antiquity to the present. In direct proportion to the progress made by any people in civilization, literature and the arts,

has ever been the demands upon their medical profession, for a more perfect knowledge of sanitary laws and the nature and cure of disease. We can look back with pride, and to the present and future with confidence, to the efforts that have been and are being made by our profession, to lessen "the ills that flesh is heir to," and diminish the sum total of human misery. We know that under the operation of sanitary laws discovered and enforced through the agency of our profession, the ratio of human life is steadily on the increase. We know that through the same agency, diseases which formerly desolated cities, kingdoms, nations, and continents, have either become extinct, or have been rendered powerless for evil.

But not to make this address a eulogy upon our profession, we would call your attention to our legal *status* in the State of Ohio; also, to what we think is but a measure of justice to us on the part of the State, and our reasons for presenting this claim to the law-making power.

The decisions of our courts, with regard to the medical profession are, in effect, as follows: That when any man assumes to practice medicine and surgery, and advertises himself as a physician and surgeon to a community, it is in legal effect entering into a contract with every individual member of that community, that he will, when called upon, bring to the aid of such individual the best medical and surgical skill. This is a fair statement of the case, and against it we have no word of complaint.

But the foundation of all our knowledge of the cause and cure of disease, the fountain from which we draw all our ideas of treating human ailments, is a correct knowledge of the general and minute structure of the human frame. Without such knowledge there could be no correct understanding of Physiology, or the laws of life, or of Pathology, or the laws of diseased action. Without such knowledge we could not locate the organ affected in disease, or point out the function deranged. Without it the surgeon would be power-

less to exercise the highest skill of his art, for the relief of suffering or accident. We reiterate that a correct knowledge of human anatomy is not only essential, but absolutely indispensable, to all progress in medical science.

This knowledge can only be obtained by practical dissections. No representations of parts, however correctly drawn, or artistically executed, convey to the student of anatomy a just idea of the appearance and relation of anatomical structures. Neither can it be learned from witnessing dissecting done by others; each one must take the knife in hand and work for himself.

How is this knowledge at present to be obtained in the State of Ohio? Simply by determined and persistent violation of the laws. Under the present law (page 437 Swan & Critchfield), which statute is all that exists in this State in relation to our subject, no provision is made for the anatomical use of bodies previous to burial, and afterwards the consent of the custodians of cemeteries must be obtained, (as the law by implication provides,) to make such use a lawful act. It is extremely unlikely that such custodians will brave a known public sentiment, and permit the spoilation of the grave. Yet the necessity of this knowledge of anatomy is so apparent to the student in medicine, that he will seek it at almost any risk, and we regret to say in small regard to the current of public sentiment. Consequently, the subjects for dissections are now mainly furnished by a class of men of questionable character, known as "resurrectionists," who drive their trade for hire. It is a mistake to suppose that our medical teachers deal willingly with these men. It is a matter of the sheerest necessity. Another commonly received opinion, but one equally erroneous, is, that the dissection of human bodies is a kind of dissipation, to which the medical profession is so much given, that it requires the strong arm of the law to restrain them. We beg leave utterly to repudiate any such ghoulish propensity. Any physician will say that the practice of dissection was the most unpleasant duty of his studentship, or of his whole professional life.

Physicians are equally, with other members of community, interested in preserving inviolate the sanctity of the grave. They, with other men, have their buried dead, whom they have committed to the tomb with many tears. And to provide by law for the prosecution of the study of human anatomy, and put an end to the violation of the grave, is the direct object of our petition to the coming Legislature. We believe a law of the kind we contemplate will effectually put a stop to such outrages on the public decency, as are constantly recurring in the neighborhood of our medical schools every winter.

Another object which we have in view, in the enactment of such a law, is to put a stop to the present influence on the minds of the young, who are trained to the medical profession. At present every student of medicine knows when a subject for dissection is placed before him, that it was obtained in violation of law. This, we believe, is liable to beget in the minds of the young, a disregard for legal enactments, and is, in our opinion, inculcating a bad or doubtful morality in those who will, in all probability, exercise a more than ordinary influence in any community where their lot may be cast.

Our proposition to remedy the evils recited is this: thousands of persons every year die and are buried at the public cost from our public charities, prisons, station houses, &c. These persons are mostly without kindred or connections, so far as is known. Their number is proportionately very large in our large cities, where our medical schools are located. No one's feelings would be injured by legally consigning the bodies of these persons to the dissecting room, and the supply of material would be abundant for all our schools. The public would, it is believed, rest satisfied, knowing how and where the subjects for anatomical study were obtained. Wholesome and needful restrictions must of course be a part of any legal enactments on the subject. The great States of New York and Pennsylvania, and some others have passed laws containing provisions similar to those we have indicated,

and they are working well, and under their operation the schools for medical teaching are extending their field of influence, and drawing larger classes than ever before from all parts of the country. We have in Ohio medical schools where we believe, with the single exception of anatomical teaching, the facilities for acquiring a sound medical education are not exceeded by any in the United States. Under the operation of the law we contemplate, we look forward when medical teaching in the schools of Ohio shall be to the West what that of New York and Philadelphia is now to the whole country.

Accompanying this address you will find copies of a memorial and circular, a copy of which we believe has been sent into every county within the State. If the object of our petition commends itself to your better judgment, we confidently expect your encouragement and countenance, and if you deem it of sufficient importance to the public good, we believe you will bring it to the notice of the Legislature.

With great respect we are your obedient servants.

O. G. SELDON, *Committee.*

Soon after the above document was received by Governor Hayes, he acknowledged its receipt by the following communication addressed to your chairman:

"STATE OF OHIO EXECUTIVE DEPARTMENT,
December 23, 1869.

O. G. SELDON, M.D., *Chairman of Committee, Shanesville, O:*

DEAR SIR—I am directed by the Governor to acknowledge the receipt of your memorial, asking such legislation at the hands of the General Assembly as shall legalize the procuring of material for dissections, by students of medicine, &c., and to state that he will transmit the same by special message at an early day of the coming session.

Very Respectfully,
(Signed) W. R. THRALL,
Private Secretary."

Accordingly on the 13th day of January, 1870, the documents sent to Governor Hayes were by him forwarded to the Legislature with the following message:

"EXECUTIVE DEPARTMENT, COLUMBUS, O.,
January 13, 1870.

To the General Assembly:

I have the honor to transmit herewith a memorial from a committee appointed by the Ohio State Medical Society, held in this city on the 8th day of June last, praying for "a law which shall make legal the dissection of human bodies." But one copy being furnished this department, the same is hereby sent to the Senate.

Very Respectfully,
(Signed) R. B. HAYES, *Governor.*"

On the 24th day of January, your chairman, at the request of his colleagues of your committee, repaired to Columbus to observe what progress had been made by the Legislature in the subject of our memorial. Dr. A. J. Jenner, of the Senate, had drawn up a bill, mainly copied from the New York anatomy law, which bill had already passed its second reading in the Senate. Some changes were proposed by your chairman which were cordially accepted by Dr. Jenner, and which, in our opinion, made the proposed law all that the wants of the medical profession of Ohio demanded. After some parliamentary manœuvering on the part of Dr. Jenner, who displayed rare tact in ridding the bill of amendments, which would have crippled its provisions in its practical application, it passed the Senate as it was offered to that body without any amendment, which changed its essential features. So it went to the House of Representatives, where, as it was ascertained by previous canvass, it would receive a majority vote in its present shape. Unfortunately for us, however, when the bill came before the House for discussion in committee of the whole, many strong friends of the measure were unavoidably absent, and the determined opponents of the bill succeeded in so altering and amending it as to render it

decidedly inefficient for practical purposes, so far as relates to the procuring material for dissection. On its return to the Senate it was thought best by the friends of the measure to accept the bill as it was and to trust to the future to so amend it as to give it a more practical character. The bill as it finally became a law reads as follows:

AN ACT

To encourage the study of Anatomy.

SECTION 1. *Be it enacted by the General Assembly of the State of Ohio*, That it shall be lawful in this state to deliver to the professors and teachers in medical colleges and schools, and to the members of county medical societies that are or may be auxiliary to a state medical society, and for said professors to receive, the remains or body of any deceased person for the purpose of medical and surgical study; provided that said remains shall not have been interred, and shall not have been desired for interment by any relative or friend of said deceased person, or by some county or township officer, within twenty-four hours after death; provided, also, that the remains of no person who may be known to have relations or friends shall be so delivered or received without the consent of said relatives or friends; and provided that the remains of no one detained for debt, or as a witness, or on suspicion of crime, or of any traveler or stranger, nor of any person who shall have expressed a desire at any time that his or her body may be interred, shall be so delivered or received, but shall be buried in the usual manner; and provided, also, that in case the remains of any person so delivered or received shall be subsequently claimed by any surviving relative or friend, they shall be given up to said relative or friend for interment; and it shall be the duty of said professors and teachers decently to inter in some public cemetery the remains of all bodies after they shall have answered the purposes of study aforesaid; and for every neglect or violation of this provision of this act, the party so neglecting shall forfeit and pay a penalty of not less than twenty-five nor more than fifty dollars, to be sued by the next friend, for the benefit of the nearest of kin.

SEC. 2. The remains or bodies of such persons as may be so received by the professors and teachers aforesaid, shall be used for the purposes of medical and surgical study alone, and in this state only; and whoever shall use such remains for any other purpose, or shall remove such remains beyond

the limits of this state, or in any manner traffic in the same, shall be deemed guilty of a misdemeanor, and shall, on conviction, be imprisoned for a term not exceeding one year in a county jail.

SEC. 3. Every person who shall deliver up the remains of any deceased person, in violation of, or contrary to any or all of the provisions contained in the first section of this act, and every person who shall receive said remains, knowing the same to have been delivered contrary to any of the provisions of said section, shall, upon indictment and conviction, be fined in any sum not exceeding one thousand dollars nor less than three hundred, and be imprisoned in the county jail not more than six months; and it shall be the duty of the judge of the court of common pleas at every term thereof, in the charge to the grand jury, to give especially in charge the provisions of this act.

SEC. 4. This act shall take effect from and after its passage. Nothing contained herein shall be so construed as to interfere with or repeal any laws now in force, the purpose of which is to prevent grave robbing.

A. J. CUNNINGHAM,
Speaker of the House of Representatives.
J. C. LEE,
President of the Senate.

Passed March 25, 1870.

Such has been the result of the labors of your committee, in the premises, and although we cannot regard the law as a model, and much as it falls short of what we desired to obtain, and believed we had a right to demand, and just hope to expect, we consider the vital point as already gained. The law of Ohio now recognizes the dissecting of a human body as a legal act, and for the act *per se*, no punishment can be inflicted. This relieves us of a great burden, as well as removes a grievous wrong, and we believe we may confidently look to the future for a more liberal consideration of the rights and demands of physicians, at the hands of our Legislators.

The profession of our State owe a debt of lasting gratitude to Dr. Jenner of the Senate, the author of the bill, for the persistence and courage with which he pressed this subject upon the notice of the General Assembly, and the tack and judgment displayed in its management while it was under consideration

before the Senate. Also, to many other members of both Senate and House, who stoutly advocated the measure and contended against its opponents, with a zeal worthy of a cause like this. Your committee much regret that they have no list of those who voted for the bill in either House, as it would give them great pleasure to bring their names prominently before their medical brethren.

Your chairman would take this opportunity to express his hearty thanks to his colleagues of your committee, for their generous and ready co-operation in every measure proposed, having for its object the success of our cause. No conflict of opinion occurred between us, and much pleasant intercourse by correspondence, by which we tried to encourage and strengthen each other in our efforts, in what was by many honestly thought to be a hopeless cause.

Your chairman cannot forbear to remind the medical profession of our State, that great credit is due to these gentlemen, Drs. Howard and Kay, and, personally, I express the hope that the acquaintance begun under such discouraging circumstances, may be developed into warm and enduring friendship.

Upon the whole, your committee believe that enough has been gained to encourage us to press forward the good cause, and at each fitting opportunity to present our claims without hesitation to the law-making power. When progress has once been made, and its benefits fairly appreciated, a retrograde movement can hardly be looked for or feared; and beside the word "Progress" upon our banner, let us inscribe the motto, "*Perseverando Vinces*," and go forward until we have placed our profession where its great benefits to the human race justly entitle it to stand.

All of which is respectfully submitted.

O. G. SELDON,
E. W. HOWARD,
Committee.

HISTORICAL REVIEW

OF

Medical Organizations in Ohio.

BY EDWARD B. STEVENS, M. D., OF CINCINNATI, O.

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MEDICAL ORGANIZATIONS IN OHIO.

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All excellence is the result of individual effort. But social progress, and the success of great enterprises, imply combination of labor. These two then go together—individual exertion and organized effort. The silent ant carries to its home its daily earnings—but after all *it is a poor silent ant*—though ever so busy. The winter's store is the aggregate of successive accumulations of the colony.

All important social results are typed in this general proposition.

Much that we do as invidualls is only selfish—but wiser and better councils and purposes, aggregate the selfish labors of the individual, and develop the features of general advancement.

Those who love the profession of medicine have steadily and steadfastly worked upon this idea. The profession of medicine in its purity—and the profession of medicine in its greatness—is the result of this sort of aggregation of personal effort, and combined or organized plan.

In the early days of all society, there are obstacles and difficulties that time, and the accumulated wealth of the community, overcomes. So, it is hard for us of these later days to estimate the worth of pioneer labor.

To-day, medicine in Ohio occupies a very proud position. There are memories of the past that we must never ignore;

there are souvenirs of history too sacred to be forgotten. But for all this we have traveled up through tribulation and days of hardship. He who wades through the musty, smoky records and pamphlets, and scanty histories of the past *sixty years of Ohio*, will be at times *translated*—at times *sorrowful and tender*—at all times in a spirit of *veneration* for the self-abnegation of those who have gone before us—and after all, our egotism *will live after us!*

Perhaps the time will come when some "old mortality" will strive to chisel in lasting marble the brief history of medicine in Ohio during these pioneer years of our century; its traces are but the briefest landmark of *loving works well done.* The first doctors of Ohio were gathered to their fathers—brave, silent giants—but other than this they made no sign.

Our present meeting, it is true, celebrates the *Twenty-fifth Anniversary* of our present organization as a State Medical Society. Our fathers, however, were, from the beginning, well aware of the power of associated effort, to promote personal and professional culture, and advance personal and professional harmony. So we will find, in reviewing the fragments of medical organizations in Ohio, that we have had, properly speaking, *three eras of associated history.*

1st. The days of the old District Medical Law, with its many amendments.
2d. Our voluntary convention system.
3d. Our present State Society.

I. As early as about 1812 was enacted the old District Law, as it was always styled, for this State; and Dr. Drake tells us, that he made at that time a winter visit to Chillicothe, to attend the first State Convention provided for by that law.(1) There were present just five delegates: DR. CANBY, of Lebanon, Dr. PARSONS, of Columbus, Dr. DRAKE, of Cincinnati, Drs. SCOTT and EDMISTON, of Chillicothe. Of course there was no convention, but we cannot withold our admiration of the spirit which impelled these gentlemen to

(1) Western Medical Journal, Vol. VI., 1834, p. 479.

journey the breadth of a state in midwinter with such facilities for travel as we may suppose *sixty years ago!*

There seems, however, to have been spasmodic efforts from time to time, to keep up these conventions, delegated from the District Societies; and we can clearly trace to them influences which originated some of the most important beneficiary enterprises in Ohio.(2)

In 1827—second Monday of December—one of these Conventions was held in Columbus—(after an interval, so far as we can discover, of many years)—where we find the names of John C. Dunlevy, Joshua Martin, George McCook, Peter Allen and Thomas Carroll, amongst the active members—men who have all made a mark. Dr. Wooley, of Cincinnati, was the President, and amongst the important business transacted was the adoption of a constitution and plan of a *State Medical Society*, the first session of which was to convene January, 1829. Dr. Peter Allen, of Trumbull county, gives a graphic account of the assembling of these delegates of 1827. "Towards the latter part of that year, some fifteen or twenty horsemen might have been seen wending their way, through mud and mire, along the different roads that centered in the village of Columbus. Their personal appearance somewhat resembled that of a company of men crawling out of a canal, where they had been excavating on a rainy day."(3) If this calls up primitive days to our mind—it may also be remarked that doctors in those days enjoyed a good deal of primitive surroundings. For a musical account of a class of *female physicians* who practiced largely in the first settlement of our State, and wielded much more influence, we regret to say, than the female physicians of our time—I refer you to a capital paper read to the Society in 1857, by Dr. Holston.(4)

So far as we can discover this effort to form a State Society did not succeed and whatever organization was feebly sustained continued in the convention form; a convention, for

(2) Drake's Western Medical Journal, Vol. I., 1827, pp. 68, 598.
(3) Dr. Peter Allen's Address—Transactions for 1857.
(4) J. G. F. Holston's Report on Obstetrics, 1857, page 40, *et seq.*

example, was held in 1831. These conventions, however, were sometimes styled General Medical Society for Ohio.

The older members of this Society will remember this old District Medical Law, as a plan to control the practice of medicine; no one was recognized as physician unless he was admitted to membership in a District Society—he could not collect his bills by law. But it was at length agreed that during its operation quackery and systems of irregular practice flourished as by a hot-bed process. So that finally, and after various modifications, in 1833 the Legislature entirely repealed the law; and thereafter medical conventions ceased to be the result of law, and became matter of individual and voluntary enterprise. Our past legislative experience, however, seems to stick to us, and has doubtless induced the profession to be chary of seeking for itself any form of legal protection.

II. After the repeal of this law, and the organization which grew out of it, we find no record of any State Convention until that of January, 1835, which was convened in response to a circular issued by Dr. Wm. M. Awl, of Columbus. As this Convention begins our *second era* of voluntary conventions, it will be of interest to clip from that circular the objects to which professional attention was particularly invited.

"The regulation of Professional Etiquette.
The construction of Independent Medical Societies.
The support of a Periodical Journal of Practical Medicine.
The erection and location of Public Asylums for the reception of Lunatics and the instruction of the Blind.
The promotion of the Temperance Cause.
Regulation of Vaccination.
The convenient supply of the Leech."(5)

To this Convention, "all regular, scientific practitioners of medicine, who were disposed to advance the honor and dignity of the profession," were invited.

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(5) Drake's Western Journal, Vol. VIII., 1835, p. 453, *et seq.*

The Convention was largely attended, and seems to have entered earnestly upon the important topics suggested by the circular.

Dr. Peter Allen, of Trumbull county, was made President.
Dr. Kreider, of Lancaster, Recording Secretary.
Dr. Wm. M. Awl, of Columbus, Corresponding Secretary.
Dr. M. B. Wright, then of Columbus, Treasurer.

Dr. Dan. Drake appears as one of the leading spirits. He gave an address, urging the establishment of a school for the instruction of the blind.

Dr. Thomas D. Mitchell, gave a lecture on the necessity of erecting a State Lunatic Asylum, at that time the only institution of the kind in Ohio, being the imperfect cage attached to the Commercial Hospital at Cincinnati.

Hospitals, Medical Journalism, Medical Education, all came in for consideration at this meeting.

The Convention closed their deliberations by singing a parting ode to the tune of Old Lang Syne, (6) and adjourned to meet at the same place on January 7, 1838. I quote the words of the opening stanza of that ode:

From Erie's chill and misty coast,
  Ohio's sunnier shore,
We came to blend our various thoughts,
  Then part to meet no more.
Ah! we must part my stranger friends,
  This kindly greeting o'er,
But let our hearts together cling,
  Deep pledged forever more.*

As agreed, the Convention of 1838 was held, and manifested a large degree of professional energy.

Dr. S. P. Hildreth, of Washington county, was President.
Dr. Wm. M. Awl, of Columbus, Recording Secretary.

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*NOTE.—I learn from Dr. Thompson that the author of this ode was Dr. Drake, who had a number of printed slips for the use of the Society, and, indeed, in various ways made special individual effort to secure interest to this meeting.

(6) Drake's Western Journal, Vol. VIII. p. 485.

Important reports were made at this meeting, on educational and scientific matters, and a very readable letter was furnished from Prof. Willard Parker, then of Cincinnati College, (Drake's), reviewing with some critical sharpness the state of "French Surgery." Prot. Parker had just returned from a visit to Paris.

The Convention of 1839 was held in the city of Cleveland, and the time was changed from January to May, a period of the year to which it has very nearly adhered ever since. And from this time we find the meetings were more frequent; with the exception of 1840, Conventions being held annually until the Convention merged into our present State Society.

At Cleveland—
Dr. J. P. Kirtland, was President.
Dr. Geo. Mendenhall, (then of Cleveland, now of Cincinnati), Sec'y.

In 1841—Convention at Columbus—
Dr. George W. Boerstler, of Lancaster, President.
Dr. M. Z. Kreider, ———, Secretary.

This Convention adjourned to meet in Cincinnati in 1842, and Prof. John T. Shotwell was requested to have a cadaver prepared with the view of demonstration to the Convention of the Surgical Anatomy of Hernia, though we do not find this request carried out.

May, 1842—At Cincinnati—
Dr. Robert Thompson, of Columbus, President.
Dr. L. M. Lawson, of Cincinnati, Secretary.

1843, May 8—At Lancaster—
John P. Harrison, of Cincinnati, President.
Tom O. Edwards, of Lancaster, Secretary.

May 28, 1844—At Mt Vernon—
R. D. Mussey, of Cincinnati, President.
L. M. Lawson, of Cincinnati, Secretary.

From 1845 to 1851, Conventions were held in Columbus each year; of 1845, 1846, and 1847, I find no records.

1848—R. Hills, of Delaware, was President.
J. H. Tate, of Cincinnati, Secretary.

1849—Phiny M. Crume, of Eaton, President.
N. Gay, of Columbus, Secretary.
1850—W. W. Rickey, of Toledo, President.
John. A. Murphy, of Cincinnati, Secretary.
1851—Wm. Judkins, of Cincinnati, President.
S. B. Davis, of Franklin county, Secretary,

Thus, incidentally, we have called up some of the men who were the active workers of those Convention days. Very many of these also continued to lead the Society; but the giants of those days are not with us now.

Samuel Parsons, Robert Thompson, Joshua Martin, Edwin Smith, Dan. Drake, Thomas D. Mitchell, John Eberle, Silas Reed, Wm. Mount, Daniel S. Gans, R. L. Howard, Amasa Trowbridge, John P. Harrison, Reuben D. Mussey, John T. Shotwell, John Dawson, C. C. Sams. What a host of worthy men were there, who have filled up their measure of good works, and gone to reward.

Several active Convention men, subsequently left Ohio for new fields of labor, in various directions. Drs. Isaac and Elias Fisher, were energetic and cultivated men, hard working practitioners of Southern Ohio; they are westward. Dr. S. P. Hunt, of Warren county, was a faithful worker of that time, he has retired from practice and lives in Illinois, in the enjoyment of a vigorous old age. Prof. Willard Parker, long since removed to New York City, where he still stands foremost in Surgical ranks.

Prof. Thomas D. Mitchell, removed to Philadelphia, and died in the harness, a Professor in Jefferson College. Samuel D. Gross was comparatively unknown to fame in those days. I need only allude to his present proud position as a proof of the wonderful intuition of Drake in his foresight of the future of men. Dr. Wm. M. Charters, then of Lebanon, Warren county, is now Prof. of Chemistry in Savannah, (Ga.) Medical College.

Boerstler, Kirtland, Rives,* Carroll, Rogers, of Springfield,

*While the ink is scarcely dry on these pages, we receive the intelligence of the death of one of these prominent names. Full of excellent worth

Rogers of New Richmond, Russell, Henderson, Awl, Conklin, are still with us, some of them, thank God, full of vigor, most of them full of honors as of years, and ripe grain for the Master's sickle.

As we have seen, these voluntary Conventions continued to be held until 1851, but the State Society was organized in 1846, and for these years, 1846–51, Conventions were held simultaneously with the society, and at the same place. It is not exactly easy to understand why the two organizations were thus continued, especially as the active men of both were the same.

III. The *Ohio State Medical Society* was organized in a parlor of the old Neil House, Thursday evening, May 14, 1846.

Dr. Boerstler was chairman of the preliminary meeting and First President of the State Society. Dr. James F. Hibberd was Secretary, and appears to have been one of the most active in the organization of the Society. Dr. Hibberd, long ago removed to Richmond, Indiana, and is recognized as one of the leading physicians of that State, and well known as a prominent member of the American Medical Association.

The records of the Society for the meetings of 1846, 1847, 1848, are but meagre. There were 25 gentlemen enrolled as members of the original organization. Amongst them we note the names of the lamented Jesse P. Judkins and the lamented John Butterfield, Vice Presidents of this first meeting; also, we find Samuel St. John, who, I presume is the present brilliant Professor of Chemistry in New York City. Still on, amongst the list of that first roll, are the names of

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and honored labors, Dr. Landon C. Rives is called by the Master to go up higher. In his day he was one of that brilliant faculty of the old Cincinnati College grouped around Drake; amongst these great men he stood a peer. He has just departed loved by all who knew him, full of honors as of years, having reached the full extent of the prescribed four score.

our honored President, Prof. S. M. Smith, and the faithful watch-dog of our Society's treasure—Dr. J. B. Thompson.

For 1847—Robert Thompson was President.
F. Carter, Secretary.
For 1848—Jared P. Kirtland, President.
F. Carter and R. Hills, Secretaries.
For 1849—R. D. Mussey, President.
Hills and Carter, Secretaries.
For 1850—R. L. Howard, President.
Hills and Carter, Secretaries.

About the year 1848-49, an effort was made to legislate all sorts of irregular practice into the Commercial Hospital of Cincinnati, and so we find, in 1849, a series of resolutions deprecating such irregularity—thus it will be seen the tactics of quackery—like history—is still but repeating itself.

In 1850, Ohio seems first to have made her record in the operation for Ovariotomy; so well sustained by our ex-President, Dr. Dunlap, at the present time. That year, Dr. Philip J. Buckner, then of Georgetown, made his first report on Ovariotomy with cases; with a second report in 1851, more minute on the general subject of Ovarian Disease, and tabulating 11 cases of operations, then believed to be all that had been made in Ohio up to that date.

1851. The meeting for 1851 was held in Columbus, (such being the requirement of the By-laws up to this time—a provision, however, repealed at this meeting, and the Society met in Cleveland in 1852.)

For 1851—Dr. G. W. Boerstler, of Lancaster, was President.
Drs. Trevitt and Effinger, Secretaries.

We now find the question of segregating teaching and granting of degrees suggested in a report of Dr. Trevitt, proposing a Board of Officers, whose duty should be to examine all candidates for medical degrees.

Dr. Buckner also offered resolutions, providing for a Board of Examiners of the preliminary requirements of students, and requiring that no member of the State Society should receive a medical student in his office until such student had received the certificate of satisfactory examination by this

Board. These resolutions were referred to Dr. Buckner for further report, and in 1852 he elaborated his plan, and presented a list of Examiners, distributed to nearly every county in the State.

So far as we are able to learn, this excellent proposition was never accepted in good faith by the profession of Ohio.

This year the old Convention system, by formal vote, merged into the State Society, Dr. Wm. Judkins, of Cincinnati, being the last Convention President. The surplus in the Treasury ($38) was voted to the State Society—and the proceedings of the Convention printed with the proceedings of the Society.

1852—Society met in Cleveland—
Prof. H. A. Ackley, made President.
Drs. R. G. McLean and H. G. Carey, Secretaries.

Amongst the interesting papers read this year, was one by Dr. Tom. O. Edwards, claiming strychnine as an important remedy in the treatment of Cholera—giving his Hospital experience during the epidemic of 1851.

1853—Met in Dayton—
Julius S. Taylor, elected President.
Henry K. Steele and C. S. Kaufman, Secretaries.

Amongst the notable features of this meeting was the donation of a valuable gold medal, from the Montgomery Co. Society, to be offered for the best essay of 1854. This medal was awarded at the meeting of the next year, at Cincinnati, to Prof. M. B. Wright, for his somewhat famous essay on Cephalic Version, and kindred topics.

This year, also, Dr. S. G. Armor, then of Cleveland—since of Cincinnati—now of Detroit—united with the Society and read an essay on Zymosis; it attracted much complimentary attention and comment, and was awarded the prize of '53.

Dr. Thomas O. Edwards made a popular lecture on the "*Poetry of Science.*"

1854—Met in Cincinnati—
Charles Woodward, of Cincinnati, President.
W. W. Dawson and J. T. Webb, Secretaries.

Dr. W. H. Mussey renewed the idea this year of separating the privileges of teaching and the granting of degrees; and a committee was appointed to digest a plan for a Central Board of Medical Examiners.

Resolutions were adopted providing for a memorial to the Legislature, to repeal laws restricting dissections: a movement that has at last become law, through the persevering efforts of our Society—and especially through the energy and labor of Dr. O. G. Seldon, of Tuscarawas County, and the co-operation of Dr. Jenner, of the Senate, and other medical men of the General Assembly.

1855—Met at Zanesville—
G. S. B. Hempstead, of Portsmouth, President.
Drs. W. W. Dawson and C. C. Hildreth, Secretaries.

Probably the most noteworthy matter of this meeting was an exciting discussion on Ethics. In 1854, the meeting at Cincinnati adopted a resolution approving the propriety of medical men securing patent rights for medical and surgical instruments. This excited the disciplinary zeal of the American Association at its next meeting, and our State Society was notified that we would not be admitted to representation until such resolution was rescinded, our position being regarded as in violation of the Code of Ethics. Without dissenting from this view, we cannot but regret that the American Association, with increased age and power, has not seen fit to exercise discipline with the general profession in more important respects.

At this meeting, however, the whole subject of Ethics came up for very full discussion. The valedictory address of President Woodward brought up the question at issue with the American Association, and Dr. M. B. Wright made an elaborate report, criticising generally the whole Code of Ethics, and closing with a resolution to the effect that the *golden rule* was all the code needed, and that this State Society does not require the existence of any Code of Ethics. Dr. Wright's resolution was negatived, and Dr. Grant's "*Patent Right*"

resolution was rescinded, as stated by Dr. Gordon, it "not being an expression of the sense of this Society."

1856. Met in Columbus. The venerable Peter Allen, of Trumbull county, who was an active member of the Convention of 1835, and its President, was again called to preside. W. W. Dawson and S. B. Davis, Secretaries.

The Society now seems very wisely to have practically adopted a degree of permanency in its Secretary, Dr. Dawson being continued for several years. This meeting adjourned by resolution of Dr. W. H. Mussey, to meet Jan. 20, 1857, though not specially indicated, the design of this adjourned meeting appears to have been with the purpose of influencing legislation in certain professional matters.

Thus, we find a memorial from Dr. Robertson, urging the Legislature to more fully regulate post-mortem examinations in certain cases, and to provide for the compensation of the physicians making them.

Dr. Barr proposed to memorialize in regard to the interest of practical anatomy.

Matters pertaining to a registration of births, deaths and marriages, was considered, such a law having been enacted by this State the previous year. These were amongst the most important topics considered; this adjourned meeting continuing its sessions during two days.

1857. Met at Sandusky, and the members welcomed to the hospitalities of the city in a hearty whole-souled address by the venerable Dr. Daniel Tilden—even then advanced to his three-score years and ten—but who has only been called from earth within the past few weeks, in the ripe fullness of four score years.

Daniel Tilden was elected President.
Drs. Dawson and Dunahoo, Secretaries.

1858—Met in Massillon—
F. T. Hurxthal, President.
Abr. Metz and H. M. McAbee, Secretaries.

1859—Met at Columbus—
L. Firestone, President.
Dawson and Metz, Secretaries.

About this time the importance of Asylums for Inebriates began to be especially considered, and at this session Dr. M. B. Wright, of Cincinnati, made a popular lecture, advocating their establishment.

The social feature of this meeting was prominent. Pleasant visits were made to the various public Institutions of the Capital; a banquet was given at the Neil House, and the Society made a trip to the White Sulphur Springs, enjoying the hospitalities of Andrew Wilson, Esq., for many years the popular host of that old watering place.

This brings the history of the Society down to a date quite within the personal knowledge of most of those who take an active part in its present proceedings.

The pleasant influences brought to bear upon the Society in its excursion to the Springs, attracted the meetings thither for a number of years, all the sessions from 1860 to 1866, inclusive being held there.

1860—H. S. Conklin, of Sidney, President.
Dawson and Gundry, Secretaries.
1861—M. B. Wright, of Cincinnati, President.
Dawson and T. B. Willlams, Secretaries.
1862—J. W. Russell, of Mt. Vernon, President
E. B. Stevens, and T. B. Williams, Secretaries.
1863—W. P. Kincaid, of Neville (now of New Richmond), President.
E. B. Stevens and N. Dalton, Secretaries.
1864—G. C. E. Weber, of Cleveland, President.
E. B. Stevens and W. C. Hall, Secretaries.
1865—B. S. Brown, of Bellefontaine, President.
E. B. Stevens and W. C. Hall, Secretaries.
1866—J. W. Hamilton, of Columbus, President.
E. B. Stevens and W. C. Hall, Secretaries.

At the meeting in 1860, a gold medal was voted to be awarded for the best essay on "*The use of Anesthetics in Obstetrics.*" This medal was awarded to Dr. H. Culbertson, of Zanesville, at the meeting for 1862.

The period of these successive meetings at the White Sulphur Springs, covers the time of our rebellion and the terrible days of civil war. Many of our most active members were engaged in the medical service of the country, and yet the

annual attendance was quite well sustained, and the scientific papers full and valuable. Much of the miscellaneous business was suggested by the times, more interest than usual being realized by the profession of the State, in the status, rank and pay of the medical officers of the army. At the meeting of 1863 especially, interest was given to the proceedings, by the discussion of Dr. Hammond's famous "*Circular No.* 6," in which Calomel and Tartar Emetic were stricken from the "supply table" by the Surgeon General of the United States, and, as was claimed, great injustice done by implication to the good repute of the army surgeons. The resolutions of Dr. Murphy, adopted by that meeting, strongly denounced the Surgeon General's circular, and endorsed the high character of the Ohio Surgeons then in the service.

In 1865, Dr. Pierce, of Steubenville, read a report from the Jefferson County Medical Society, in regard to the condition of the incurably insane in that county. As the result of that report Drs. Pierce and B. S. Brown of Bellefontaine, were made a committee to memorialize the Legislature in behalf of these poor creatures. The committee was continued for three years, and with much painstaking labor collected a vast amount of statistics as to the condition and treatment of "*Incurables*" in every county in the State. Their labors undoubtedly exercised much influence upon the sentiment of the Legislature, as well as upon the profession at large.

The meetings for the next three years, closing up this quarter of a century review, are fresh in the memory of most of us, and only need a few words by way of completing the statistical record.

1867. Met at Yellow Springs. The meeting was pleasant and the people made us heartily welcome; but it was not a convenient location, and the Society exhibited a return to the ancient restless spirit.

E. B. Stevens, of Cincinnati, was elected President.
W. C. Hall and J. N. Weaver, Secretaries.

1868—Met at Delaware—
A. Dunlap, of Springfield, elected President.
W. C. Hall and J. N. Beach, Secretaries.

This meeting was rendered exceedingly pleasant to the members by the courtesies and hospitality of this charming literary village, seat of the Ohio Wesleyan University.

1869—Met at Columbus—
Samuel M. Smith, of Columbus, elected President.
W. C. Hall and E. H. Hyatt, Secretaries.

Thus, after nearly ten years of a cycle, the Society returned to its old centre, where, during its eventful history, it has so often been made welcome, and so often enjoyed the attractions and hearty good feeling of the people of the Capital.

To-day, then, on the shores of the beautiful Erie, we assemble to complete our first Twenty-Fifth Anniversary, and celebrate our *Silver Wedding.*

It will be observed that I have made no review of the acrimonious quarrels pertaining to personal and college matters—that were something of a feature of the old Convention times. But it must have been something of a rare privilege, after all, to mingle with such intellectual gladiators as Drake and Harrison and Eberle and Mitchell, who, in their prime, were sometimes in the same harness pulling lovingly together, sometimes warring to the death!

I have made no historic resumé of the scientific contributions to our meetings from year to year, except such as were of peculiar significance, and indicated our efforts to advance general as well as professional interests.

But whoever will examine the series of annual volumes of our Transactions will be surprised to realize the large amount of substantial matter that has accumulated in these successive years. Reports upon each of the leading practical departments of our profession are steady, and constantly bringing before the Society the newest contributions—rare cases—advanced ideas in pathology—new remedies in our Materia Medica and improvements in our special branches of practice. It would be tedious and scarcely of profit or instruction to recapitulate them; but it has occurred to us, in our study of these records, that it is almost a pity that many of these re-

ports should remain buried in the odd volumes and limited circulation of our Transactions.

In many of them will be found a wonderful freshness of expression and matter, as well as literary excellence, that would warrant their being re-edited and published anew in book form.

Incidentally this review has alluded to the active workers in our Society; and yet we have not done justice to the host of quiet men whose allegiance to the profession has, year after year, been exhibited in unswerving devotion to the interest and prosperity of our State Society.

From year to year, new men have come amongst us, and more or less rapidly advanced to the front ranks. From year to year, the fathers have fallen out of their places, and many a dear friend meets no more with us forever. The poor who have lost, one by one, a friend in need; the rich, who have parted with safe advisers, will, each in their way, cherish the sacred memory of these departed heroes! For us they must be embalmed in the recesses of our hearts as good and honest men and brothers.

This closes up this third epoch of our State organizations—the first of our history as a compact, living, working association. The history is a worthy one. From days of pioneer life and its privations, we have come forward to a day rich in civilization and refinement. In all its development the Society has done its honorable share and borne its part in the heat and burthen.

Let us anticipate great things in the mighty stretch of the Future! that spreads out before us! Few of us who celebrate this day, will probably be spared to enjoy the *golden anniversary;* one by one we shall have done our part—well or ill—and wrapped in our last garment—go Home. But one by one, as we cease our labor, I trust the heartfelt aspiration will still embrace the Society in all its past, and hope for it the realization of the words of the great English lawyer, in regard to the British Constitution—"*Esto Perpetua.*" Not only may it be perpetual, but still better let us adopt the motto of Old Maryland—"*Crescite et Multiplicamini.*"

HÆMATICS.

BY E. H. HYATT, M. D., DELAWARE, OHIO.

REPORT ON HÆMATICS.

BY E. H. HYATT, M. D., DELAWARE, OHIO.

Mr. President and Gentlemen:

At our last assembly I had the honor to read a paper on the action of Hæmatics, or blood medicines; which also forms the topic for discussion to-day.

We took occasion then to speak simply of one division of this important branch of therapeutics, (viz) Restorative Hæmatics: those medicines which act in the cure of diseases by *supplying* or *restoring* to the blood a *natural and wanting* material; which *want* or *deficiency* forms the basis of morbid or diseased action.

At this meeting, (having had the honor to be continued upon this subject,) we propose, briefly, to consider the second division, or *Catalytic* order of Hæmatics.

It is a fact, now well authenticated, that there is a large class of diseases which depend on the presence in the blood of a morbid material, or on a constant working of a morbid process in that fluid, which can only be met, and successfully combated in a direct way by Catalytic Hæmatics; the action of which we now propose to consider.

The *term Catalytic* is derived from the Greek verb *kataluo*, which signifies to destroy or unbind. Catalytics, therefore, act by destroying the morbid material of the blood, or by counteracting the morbid process which may be going on in that fluid, and then pass out of the body, being unnatural to it. In this they are unlike restoratives. Each restorative has in healthy blood a substance analogous to, or identical with itself, and replaces this when wanting. Their office is supply or substitution.

Whenever, then, the action of a morbid poison causes any derangement in the proportion of the normal constituents of the blood, a restorative may supply this defect. Catalytics, on the other hand, encounters the enemy at once, in a most *positive* and *direct* way, routs and destroys it, and together, are carried away through the glandular outlets of the body. Catalytics, then, being foreign to the blood, or there being nothing in the blood corresponding to them, do not remain in it to supply a *want;* but just long enough to perform their work, and then pass out of the system. Another peculiarity in their action is, that *even in health* they work out their peculiar process in the blood; while restoratives, in that case, exercise no particular influence. Such is the difference between Restorative and Catalytic medicines.

Each Catalytic has peculiarities and affinities which distinguish it from all others; and each tends to work out a peculiar process in the blood.

And the fact that Catalytic medicines do produce distinct actions in the blood, has proved a stumbling-block to the disciples of Hahnemann. For, in some cases, their action may, to a certain extent, simulate the disease which they tend to cure, and has thus been confounded with it, by this imaginative observer. Their partial resemblance is probably due to the fact that both disease and remedy produce a series of changes in the same set of particles in the blood. If it were not so, the remedy could not meet the disease. But that their actions are essentially different is sufficiently proved by the fact that they counteract or destroy each other.

Thus, an acid and an alkali are so far similar that they may both produce heat when mixed with water, and both prove corrosive and destructive to organized tissues; but they are practically contrary, and when brought together they neutralize each other.

Catalytics, therefore, produce certain actions, which are *contrary or anti* to diseased actions, inasmuch as they neutralize them and cannot exist with them.

Of the actions of these medicines two things are well

known. When they cure a disease they do so definitely, so that it does not, in general, tend to return; and, when they only alleviate it, the improvement effected is more or less permanent; as ague, for example, a truly zymotic disease. The paroxysms may be interrupted by the use of Quinine on the *restorative principle*, by supplying the *wanting* and *needful* material to the blood, and thus restore the lost balance. But the tendency (as is well known,) to a return of the chill still exists, because the poison yet remains active in the blood.

But, when ague is cured by the administration of Arsenic, a true *anti-periodical Catalytic* agent, it does not tend to return, because the *poisonous miasma* is *neutralized* by the Catalytic action of the Arsenic.

In the second place, Catalytics are found to produce, when long administered, a change in the blood for the worse—a diminution in the amount of fibrine in the red corpuscles. Thus, they are blood impoverishers when given in excess. These considerations alone, when combined with the proof of absorption, are conclusive as to the fact of their being Hæmatic medicines.

Catalytic remedies are chiefly drawn from the mineral kingdom, and consist of metalic salts and other substances which are poisonous when given in large doses. They all have an action in the blood, in some cases similar, in many different, in most distinctive. Antimony, for example, wastes the blood, at the same time it affects the nervous system.

Mercury attacks the plastic element of the blood with still greater vigor, produces a fetid material out of it, and often causes a peculiar rash upon the surface.

Iodine wastes the body. Saline medicines dissolve the fibrine and waste the blood—as do also the Alkalies.

Arsenic, Sulphur, Silver, Zinc, Lead and Copper, have many curious and peculiar blood actions. They deteriorate that fluid and cause eruptive disorders. Each works out a certain and peculiar process in the blood, and materially affects the *condition* of that fluid.

From these considerations, it is apparent that the diseases

in which these medicines are employed are active blood-diseases. That syphilis, scrofula, gout, rheumatism, scorbutus, ague and eruptive diseases are essentially blood-diseases; and that in each of them there is either a morbid material present in that fluid, or a morbid action going on there which constitutes the chief wrong, is so generally admitted, that it may be said to form a fundamental part of the science of medicine as taught at the present day.

In inflammation, from whatever cause produced, we have one thing which always brings *it* within the sphere of action of blood-medicines—*i. e.* the excess of fibrine in the blood, which keeps up the fever and tends to cause effusions. There is, then, in all diseases controlled by Catalytic medicines an active wrong in the blood; and the action of these medicines results in the neutralization or counteraction of these morbid agencies.

Of the entire class of Catalytics, the only medicines that occur as constituents of healthy blood are, Alkalies, Salts of Alkalies and Earths, Chlorine and Sulphur.

But even these when given in large quantities, when there is no deficiency, as when used for Catalytic purposes, are unnatural to the blood and must be excreted from it. With respect to the other Catalytics, their presence for a while constitutes an artificial disease, and are only recommended because they may serve to counteract a morbid action of a more serious and uncontrolable character. That is to say, when there is some pre-existing disorder, the working of these medicines may operate so as to counteract this already existing action, being so far similar to it that it acts in the same department; but being, nevertheless, (as we have seen) essentially contrary to it, because it neutralizes it. Such opposite relations are met with even among natural diseases. Vaccination and smallpox afford us an instance of mutual counteraction of morbid processes.

The idea that diseased actions may possibly be accounted for by supposing the existence of a special *fermentation* in the blood is by no means a new one. Inscrutable as these diseased

actions may be, yet we are enabled to recognize processes of a nature analogous to fermentation as going on in that fluid in health and in disease. For instance, the change of albumen to fibrine; the changes which take place in starchy materials, before they can be oxydized into Carbonic Acid; and the changes in nitrogenous substances before absorption; and the downward progress of the same materials, from living tissue into Urea and Uric Acid, to be finally excreted from the system. Fermentation signifies a change or series of changes of a special character, caused among the particles of a compound body, by the presence of a certain other body called a *Ferment.*

There are two kinds of fermentation. In the one the ferment itself is undergoing change. In the other the change is produced by mere contact, without any change in the ferment itself.

Now, considering that Catalytic medicines are not by their nature changing bodies, being mostly minerals, it is not likely that they could cause that kind of fermentation, which requires that the ferment itself should be in a state of change. The influence of contact is the one which they would be most likely to exert.

It is possible, therefore, that one of these medicines might produce in the blood a fermentation, which might meet and neutralize the morbid fermentation; or that it might simply determine the latter in a different direction, and thus bring it to a desirable end; or by simple *contact* be able to resolve this morbid process into a natural direction; or, which is still more probable, the morbid ferment itself is constantly undergoing changes, and on account of these successive changes, less able to resist opposing remedies; while, on the other hand, Catalytic medicines are not by their nature changing bodies, thereby giving them advantage over the *changing ferment*, and power to overcome and destroy the morbid process going on in the blood. There are certain physiological considerations which renders this idea more clear and plausible.

It is to be remembered that the blood, in which we suppose such actions to go on, is not an ordinary chemical fluid, but a very complicated mixture, which is ever circulating and being maintained at a high temperature, and contains a number of compound organic bodies, each of which is liable to a series of varied metamorphoses. It is not, therefore, a very potent agency which is needed to disturb the chain of conditions of one of those inconstant bodies, which is thus continually performing the circuit of the system.

Changes are no doubt continually going on, or capable of being set up by various influences in the circulating blood which is at a temperature fit for such changes; in which also is a considerable quantity of free Oxygen, as well as Soda, Ammonia, and other elements in a state fit for combination; and to all these is superadded the agency of vital principle, the object and effect of which is continual alteration, destruction, and reproduction.

By supposing, then, the establishment, or diversion, of a set of changes in the blood, we may gain some insight into the cause of the powerful effects of some apparently insignificant medicines belonging to this division of Hæmatics.

But, if the influence and power of Catalytics cannot in all cases be accounted for by a simple and *direct* influence on the blood, or those particles which may be in a morbid state, it may be due to the *processes that their presence sets going*, and on *the products thus generated*, that their influence and power depend.

We know that Syphilis is a poison in the blood. Mercury is also a poison in the blood.

But *how* Mercury antagonizes and annihilates Syphilis; Iodine Scrofula; and Arsenic, Lepra, are questions of no easy solution.

Nevertheless, we shall now endeavor to illustrate the principles heretofore laid down, by a few examples; not being our purpose or intention to note every medicine in detail which may have a Catalytic action, but strive simply to arrive

at correct conclusions, as far as possible, in regard to the peculiar *action* of Catalytics in morbid states of the system.

And, first, we will consider the blood process of inflammation. In inflammatory fever, from whatever cause produced, the action of the heart is not only excited, but the condition of the blood is invariably altered.

There is formed in its composition an exaggeration of the healthy state, an increase in those elements on which nutrition and life depend.

The blood now contains an excess of fibrine and the colorless corpuscles; and among the red globules is observed a peculiar tendency to arrange themselves in rows. This state of things is doubtless due to a morbid process going on in the blood.

Becquerel and Rodier have shown that in acute inflammations the proportion of fibrine in the blood is increased on an average to 5.8 in 1,000 parts, nearly double the amount in health. To check and control this dangerous blood-process in inflammation, Catalytic remedies are used,commonly called anti-phlogistic agents.

Of these, Mercury and Antimony are the most potent. They attack the plastic element of the blood, or in other words, by their action, dissolve the excess of fibrine, remove the source of irritation from the heart and arteries, and allow the pulse to subside. From the chemical analysis of Dr. Wright, we learn that the mercurial agent, by some inscrutable chemical power, is able to decompose the blood; by some destructive agency it deprives it of one-third of its fibrine, one-seventh of its albumen, one-sixth or more of its red globules, and at the same time loads it with a fetid matter, the product of decomposition. Such power is possessed by few other remedies, and certainly exerted by none in the same degree as Mercury. It is an agent, therefore, of terrible activity and we may well be cautious how we handle it. Antimony is used in urgent and acute cases of inflammation, to make a sudden and powerful impression. It not only defibrinizes the blood, but prevents the coagulation of fibrine in the

large vessels, in dangerous inflammations, which is often a source of great peril.

Antimony is also a neurotic agent of great power. It has a special sedative influence over the *vagus nerve*, reducing and controlling the action of the heart and arteries. And on account of its *double* action, being both a Catalytic and Neurotic, gives it a value as a remedial agent, in many cases, over that of Mercury.

But Mercury, considered as an anti-syphilitic agent, is still more remarkable. Syphilis and Mercury are both blood poisons, as before remarked; but *how* Mercury antagonizes and annihilates syphilis is indeed a very interesting question. That it does so, we have abundant proof, but *just how* it is done has not been so clearly demonstrated.

However, we may be permitted to make a few suggestions in relation to this matter. Syphilis is evidently traceable to a special or specific poison. This is recognized by the fact of its communication from one person to another. In the system of the infected person, if uncontrolled, the *poisonous* ferment itself is undergoing constant change. It is multiplying and reproducing itself out of the elements of the blood, or in other words, it breeds and increases in quantity, works out all the mischief that it is capable of effecting, and may again be propagated to others, either by inoculation into the blood, or by equally direct transmission to a tainted off-spring.

In the treatment of the primary forms of syphilis, such as the chancre, the early eruptions, as syphilitic lichen, roseola, and lepra, enlargement and induration of the lymphatics and the inguinal and cervical ganglia, Mercury is *the* remedy. Now, it has been shown that this agent is capable of producing decomposition of the blood; but it is not simply by doing this that Mercury cures syphilis. It is more probably in another way.

Syphilis, with the eruptions, and ulcerations, and necroses, and the cachexy that results from its working, must, sooner or later, impoverish the blood; Mercury will do the same. But, if Mercury possessed no other power than that of de-

composing the blood, it could never cure Syphilis. It is, however, not unreasonable to suppose, that Mercury, in its destructive action, may seize first on those parts of the blood which are most diseased, or most liable to putrefaction, (and for this reason more susceptible to the action of this drug) and may thus immediately grapple with the fermenting and multiplying virus of syphilis, decompose it, as well as those particles of blood on which it has commenced to feed, and eliminate both these and itself together, by the glandular outlets of the body.

To cure the corrosion of the vital parts, the Mercury corrodes somewhat further and deeper, and sweeps all away, like the caustic which destroys the tissues that has been bitten by a rabid dog, and prevents the fermentation of the virus, which would otherwise result in hydrophobia and death. Or, its action may be compared to the wise plan of blowing up a number of houses to save a city on fire.

There is, no doubt, something peculiar in the blood action of mercury, which brings it into special relation with syphilis. And my own view of its action, and differing from the one given above, is this: I believe the *virus* of *syphilis* to be a *live* and *active* agent, capable of *multiplying* or *reproducing* itself out of the changing elements of the blood—it may do this by a process of fermentation, the *ferment* itself undergoing changes—or by cell growth, or otherwise, as it matters but little *how* it is accomplished. On the other hand, we know that Mercury is incapable of reproducing itself; in other words, it is not a changing body, wherein it doubtless possesses the advantage of the *inconstant* and *changing* virus, and gives the power to check and control the process of fermentation. Or, in other words, it *destroys* the *life-principle* of the virus by which it breeds and reproduces itself, and thus puts an end to the whole mischief; and all that remains to be done, is, the elimination of the remaining *effete* matter by the glandular outlets of the body.

In the later forms of syphilis, called secondary and tertiary,

the mischief is already done; the blood is depraved and a new phase of morbid action has taken the place of the first.

It would seem as if it were a certain smouldering action of a part of the poison which has escaped the operation of Mercury, but has been modified by it. Here, instead of Mercury, it is best capable of being met and controlled by Iodide of Potassium. This medicine, doubtless, performs its peculiar Catalytic action in the blood, in syphilis and also in scrofula, in a *manner* quite similar to that of mercury.

But there is another class of blood diseases which cannot be clearly traced to the introduction of a poison from *without*, which we now desire to consider. They may be arranged under the head of Arthritic diseases. The chief of which are, diabetes, oxaluria, lithic deposit in the urine; and the true Arthritic disorders, *i. e.* gout and rheumatism. In each of these disorders, there is a morbid material present in the blood, which forms the basis of diseased or morbid action, and which the system labors to cast out into the secretions.

There are certain processes always going on in the blood whose continuance in the right direction is essential to health. When one of these processes is disturbed, it does not generally cease, but goes on in the wrong direction. But suppose the natural processes of assimilation be checked at a given point, or diverted from its natural course, the result is the formation of various products, differing from those which are necessary for the growth and support of the several tissues and functions, and the consequence is, the general health is more or less seriously impaired.

As before indicated, a natural process may stop at a certain point and go no further. The material formed at this stage remains as it is. It is not wanted. It is morbid. The blood now becomes charged with a foreign material, or poison, and an active morbid process is set up in that fluid. Here the indications of treatment are the Catalytic Hæmatics, or the Anti-arthritic medicines, which may serve to counteract this morbid blood process. It is true, that Acids and Alkalies are sometimes needed in these states of the system, and are

used on the restorative principle. But true Anti-arthritic medicines are those which are employed on the Catalytic plan, to neutralize this morbid material or process going on in the blood; such as Colchicum, Nitric and Nitro-Hydrochloric Acids, Citric Acid and sometimes Mercury.

The action of these medicines may admit, on certain grounds, of a chemical explanation.

In all the disorders now under consideration, there are certain morbid constituents in the blood, which have been recognized by chemical tests by different investigators. In diabetes, there is an excess of grape-sugar or glucose, formed in the blood and excreted from it in the urine.

In rheumatism, we have a painful joint affection, attended with a great development of Lactic Acid in the blood.

In gout, we meet with another Arthritic affection, in which there is Urate of Soda in the blood, and an excess of Uric Acid and Urea in the urine. And the presence of the Urate of Soda in gout and its absence in rheumatism, constitutes the only point of difference between these two disorders; as is stated by Dr. Garrod.

A simple excess of Uric Acid in the secretions constitutes lithiasis. In oxaluria, we have an abnormal formation of Oxalic Acid in the blood, which is excreted in combination with *lime* for which base it has a great affinity.

It is a general opinion of modern chemists, that before the starch of the food can be applied to the maintenance of the animal heat, it passes through a series of chemical changes. First, assuming two equivalents of water, the starch is changed to Glucose; next this changes into Lactic Acid, which is isomeric with it; and this again combines with twelve atoms of Oxygen, and is consumed or burnt into Carbonic Acid and water, thereby maintaining the animal heat. The Oxygen needed for these processes is absorbed from the air by the pulmonary mucous membrane. Now let us illustrate the principles heretofore enunciated with regard to the *stoppages* and *deviations* of the natural processes of assimilation, producing morbid states of the system.

And first, when the starch of the food is converted into grape-sugar, and then arrested at that point, diabetes is the result. Now suppose a simple *deviation* from the natural course be brought about by the sugar being oxydized *prematurely* without first passing into Lactic Acid, we have resulting Oxalic Acid, and the phenomena of oxaluria accounted for.

Again, if the sugar in the natural process be converted into Lactic Acid and there arrested, it becomes morbid; in other words, an existing impediment to the proper oxydation of Lactic into Carbonic Acid.

Rheumatism, another blood-disorder, is the result. Now suppose there is a simple deviation instead of arrest, and the Lactic Acid instead of oxydizing *directly* into Carbonic Acid, oxydizes in combination with *urea* which is in excess, then Uric Acid and water might result, which condition produces gout and lithiasis.

Thus at each of the two transitional stages, we might have one diseased condition produced by an arrest of the natural process, and another by its deviation. These deviations and stoppages may result from a failure of some natural principle which is gifted with the control and direction of these series of transformations; or they may simply be traceable to a want of *vital* energy or *nervous* force.

These morbid states, however produced, soon become active blood-diseases, and require for their treatment the Hæmatic medicines. In diabetes, for instance, a disease arising from some defect in the assimilative processes, we have an excess of grape-sugar formed in the blood and excreted from it in the urine.

Here the indications of treatment are to aid the natural process of assimilation.

Now, if a remedy can be secured to aid the conversion of the diabetic-sugar into Lactic Acid, and the oxydation of the Lactic into Carbonic Acid and water, thus completing the natural process, then this disease is placed as perfectly within our control as ague is by the use of Quinine. I need scarcely

say, however, that to secure such a remedy has been a most difficult task.

Again, in oxaluria, where the grape-sugar is oxydized *prematurely*, before passing into Lactic Acid, producing Oxalic Acid in the blood, the Nitro-Hydrochloric Acid is *the* remedy.

The action of the nitric acid *causes* the oxydation of some of the hydrogen of the other acid and thus sets free chlorine gas. The result of the presence of Chlorine is, that from the affinity of this gas for Hydrogen, by which it is enabled to set free the Oxygen of the water, this compound acid becomes the most powerful oxydizing agent known.

This acid has, of late, been used successfully in the treatment of gout and rheumatism, in spite of the acid state of the fluids in those cases.

The beneficial influence, therefore, of this remedy in oxaluria, is doubtless due to its oxydizing power; causing the Oxalic Acid to be consumed or burnt into Carbonic Acid, and thus restore health.

In rheumatic fever, where there is an excess of Lactic Acid formed in the blood, and an *arrest* of its oxydation, we have all the phenomena exhibited of this truly troublesome and dangerous disease. And certainly a remedy that will cause the oxydation of the Lactic into Carbonic Acid is the one that is indicated.

And, as before stated, the Nitro-Hydrochloric Acid is perhaps the most efficient agent in bringing about this desirable result, on account of its wonderful oxydizing power. To say the least, it certainly exerts a true *Catalytic* or *counteractive* influence in this malady.

Again, in gout and lithiasis, there is an excess in the system of nitrogenous matter, and the tendency exists to an extra formation of *urea*, and thus more Oxygen is needed to restore the equilibrium. Now on the hypothesis, that Lactic Acid and urea are changed together into Uric Acid, it becomes evident under the above treatment that this uric acid may be oxydized back into urea and Carbonic Acid, and the balance of health restored. But the profession have changed front,

as regards the treatment of these zymotic diseases, gout and rheumatism; and the Alkaline remedies are now almost universally used. *How*, therefore, can the agency of these different and apparently opposite remedies be accounted for? for it must be admitted that both classes of medicines have proved serviceable in the treatment of gout and rheumatism.

Now I conceive that Alkalies act in rheumatism at least, simply on the restorative principle, (says Dr. Headland) supposing Lactic Acid to exist in excess in rheumatic blood, by restoring the lost balance. But this theory is not satisfactory. Lactic acid, by itself, may have no more tendency to oxydize into Carbonic Acid, than so much vegetable acid would have. And in ordinary cases a free vegetable acid passes out into the urine without undergoing any change in the system.

But it has been proved by Wohler that the same vegetable acid becomes oxydized when given in combination with an Alkali. So that if we introduce into rheumatic blood a free Alkali, a lactate of potash or soda will be formed; and this may then be enabled to oxydize into a carbonate and the natural process be completed.

It is not, therefore, on the restorative principle that we realize the beneficial influence of Alkalies in rheumatic Fever; but from their *Catalytic power in aiding the oxydation and transformation of the Lactic Acid into Carbonic Acid.* And such appears to be the true *rationale* of the action of Alkalies.

One thing at least seems to be definitely settled, that is, the natural process must be carried out by the combustion or oxydation of the Lactic Acid, which is in excess in rheumatic fever, or no benefit will be derived from any plan of treatment.

Thus we have, in as brief a manner as was possible, indicated a few of the principles which underlie the action of Catalytic Hæmatics.

Mention has been made *only* of a few medicines of this *class*, as the purpose of this paper was simply to treat of the *prin-*

ciples of their *action* as a *body*, and to illustrate the same by a few examples of special disease.

This subject, although yet in its infancy, is opening a vast field for investigation, and is now claiming a just share of professional attention. And with the *hope* and *belief* that the future developments of science will shed much additional light upon this important but hitherto much neglected branch of Therapeutics, these thoughts are respectfully submitted.

REPORT ON VACCINATION.

BY WILLIAM B. DAVIS, M. D., OF CINCINNATI, O.

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CLEVELAND, O., June 14th, 1870.

The Report briefly treats of—

1st. The Small-pox Epidemic of 1868–69 in the United States;

2d. The alleged degeneration of human vaccine lymph;

3d. Animal vaccine;

4th. Vaccino-syphilis—with an

5th. Appendix, containing letters from

(a.) Edward C. Seaton, M. D., Medical Inspector of the Privy Council, England;

(b.) J. K. Barnes, M. D., Surgeon General U. S. Army;

(c.) Wm. Clendenin, M. D., Health Officer of Cincinnati.

1st. THE SMALL-POX EPIDEMIC OF 1868–69 IN THE UNITED STATES.

By way of introduction to the general subject of *Vaccination*, I shall give a brief review of the Epidemic of Small-pox, which passed through our country in 1868–69.

In the fall and winter of 1868–69, small-pox prevailed as an epidemic, to a greater or less degree, in the United States, from the Atlantic to the Pacific coast. At several points the manifestation of the disease was as malignant, and the mortality among those attacked as great as at any period before the discovery of vaccination, proving conclusively that this monster, whom Macaulay pronounced "the most terrible of all the ministers of death," has not lost his fangs, nor his

fangs their poison. Extending from New York to California, its concentrated attacks were upon California, the Indians of the West, and Cincinnati.

In California, according to the reports of Doctors Logan,* Gibbons and Hatch,† who personally witnessed the disease, small-pox prevailed to a greater extent than was ever before known, and with a virulence and fatality which has not been surpassed. It was, if possible, more severe in private practice than in hospital. Dr. Hatch, in Sacramento, reports one death in 3 2-10ths in hospital, and one in 2 9-10ths in private practice, making the rates of deaths for both *one in three.* This agrees with the observations of Dr. Logan, who reports one death to every three in Sacramento; and one to every 2 1-2 in San Francisco. When we bear in mind that the usual death rate for small-pox before the introduction of vaccination did not exceed one in five or six, we will agree with Dr. Logan, "this fatality is almost unprecedented in the annals of this disease."

The reports from the Indians were brought by traders, and do not furnish data upon which to make a statistical statement, nevertheless all agree in representing the manifestation and ravages of the disease as fearful. In many instances whole encampments were attacked and large numbers were swept off.

In Cincinnati, the epidemic, though not so virulent as in California, was the severest and most extended of any former visitation. During the months of November, December, January and February, 1868–69, the Cincinnati Board of Health had 2,674 cases of small pox reported to it, and 511 deaths, making one death to every 5 and 1-4. This is deemed by many as a higher death rate than actually occurred, as it is claimed that some physicians did not report their cases of small-pox to the Health Officer. One thousand additional

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*Medical Review of the year 1868 in California, by T. M. Logan, M. D., Physician to Small-pox Hospital, Sacramento.

†Report on the Epidemics of California, in 1868, Transactions of the American Medical Association, vol. 20, page 513.

cases will certainly cover all unreported ones, and would make the death rate about one in seven.

How can we account for the extreme severity of the epidemic at these three points?

In California, Dr. Logan, physician to the Small-pox Hospital, Sacramento, says "the primary and chief cause is inattention to vaccination." "The large proportion of deaths that have occurred, especially in children, and in a certain class of the floating population of California, particularly the Mexican, South American or California nativity, shows that the extensive prevalence of small-pox in our midst is not due to failure of the anti-variolus power claimed for vaccination, but to the neglect or absence of its protecting influence."

Dr. Hatch, a member of the Board of Health in Sacramento during the epidemic, attributes the cause to the absence of vaccination, or the imperfect performance of it. He says that medical men are apt to neglect seeing for themselves that the operation of vaccination, having been performed, is successful; also, that nurses and midwives for money, kind-hearted, well-meaning women, from notions of benevolence, have gone from house to house offering vaccination to those desiring it. "The great discovery of Jenner has been put to a severe test; and though instances have occurred which seemingly justified an abatement of the implicit faith so long reposed in it, a careful examination of facts has only served more and more to strengthen our reliance upon this beneficent measure."

Dr. Gibbons, editor of the *Pacific Medical and Surgical Journal*, says: "Let me state a fact of immense magnitude in its bearing on this question. During the prevalence of small-pox in San Francisco, covering the greater part of the year, (1869,) not a physician contracted the disease, nor a professional nurse, nor a solitary member of the families of physicians or nurses. * * * Those persons who armed themselves properly with the shield of the immortal Jenner, walked unscathed amid the rankling pestilence, while ministering to its victims."

With the Indians, in their savage state, vaccination has never been successfully introduced. When small-pox appears in their midst, it produces great consternation and makes sad havoc.

In Cincinnati the same answer must be returned as the one given in California, by neglect of, or the imperfect performance of, vaccination.

Dr. Clendenin, Health Officer of Cincinnati, says that full ninety per cent. of those who died of small-pox during the epidemic had not been vaccinated, and that no death occurred, in which there was unmistakable proof that the individual had been previously properly vaccinated.

Cincinnati has a population of 300,000 souls; 100,000 of whom are of German extraction. The Germans make good citizens, but are clannish, and look to and follow very closely the direction of those prominent among themselves. Unfortunately, some of the more influential German physicians have discouraged vaccination. In addition to this, German midwives and barbers, persons of no education, are very extensive vaccinators, often going from house to house and performing the operation for a few cents; the only test of success required by either party is a sore arm, and the larger the sore the better the vaccination. The logical sequence of this course is recorded in the Health Office of Cincinnati, viz: 644 deaths from small-pox during the epidemic of 1868–69; nativity chiefly German or of German extraction.

The verdict of those who have most carefully noted the events of this last and most virulent epidemic in our country is, that its presence was due to the general neglect, or imperfect performance of vaccination by certain classes of the country.

This epidemic sets forth in a strong light this fearful fact, that in the latter half of the nineteenth century, in large cities possessed of all the appliances and discoveries of modern times for the prevention and amelioration of disease, a *preventible disease*, and the most repulsive of all diseases, has appeared, bringing distress and desolation to thousands

of its citizens, and in one destroying 500 lives in four months, and in another, killing one in every two and a half persons which it attacked. Legislatures enact laws for the protection of sheep, the prevention of hydrophobia and cattle disease, for the impounding of the poor man's pig and cow; but when the lives of human beings are at stake, they dare not provide laws for arresting and impounding this most terrible minister of death, who kills one in every three that he embraces, and blasts the beauty of the rest.

The partial execution of the compulsory vaccination laws in England, Ireland and Scotland demonstrate the fact, that *small-pox can be driven out and kept out of a country by legislative enactments.* I trust that America, who prides herself upon her advanced civilization, will not long permit herself to be behind England in the enactment and execution of just and humane vaccination laws.

VACCINATION.

The great storms which sweep over a continent and sometimes encircle the globe, destroying the weak things and giving deeper root to the strong, have their counterpart in the intellectual and scientific world. A fierce storm has just swept over Europe on the subject of vaccination, and its agitation is felt all over the medical world. It may be of interest for us to examine the points upon which the storm expended its force, and note the results. The first point was the alleged degeneration of human vaccine lymph. The second was the possibility of conveying spyhilis by means of the human vaccine; and, as a corrollary to the first, the superiority of animal vaccine.

In considering these points, I shall treat of animal vaccination, the second in order.

2d. THE ALLEGED DEGENERATION OF HUMAN VACCINE LYMPH.

Will vaccine virus become weakened and deteriorated by successive transmission through the human subject?

In the year 1800, Jenner claimed that vaccination, when "duly and efficiently performed, will protect the constitution from subsequent attacks of small-pox as much as that disease itself will. I never expected it would do more, and it will not, I believe, do less." In 1816, he called attention to the fact that the vaccine virus would become weakened or deteriorated by the carelessness of the operator in the selection of his matter and subject. He said: "The matter may undergo a change that may render it unfit for further use by passing even from one individual to another, and this was as likely to happen in the first year of vaccination as the twentieth."

Th observation of Jenner is confirmed by the experience of subsequent vaccinators. M. Simon, in his papers relating to the History and Practice of Vaccination, says "that no line of transmission is to be continued through a subject in whom imperfect infection is produced." Dr. Seaton, in his Handbook of Vaccination, says: "No one can doubt that such loss of activity may take place, unless due care be taken in the selection of the subjects through which the lymph is continued."

M. Jules Guerin, in the recent discussion of vaccination in the Imperial Academy of Medicine, Paris, stated that the causes which can enfeeble the vaccine lymph are known, and can be prevented by special selection and cultivation.

Admitting, then, that the lymph may become deteriorated in consequence of carelessness in the selection of subjects, the real question for our consideration is, will the vaccine virus become weakened by human transmission when due care is exercised in the selection of subjects?

In reply to this question I shall present the evidence of experienced vaccinators in America, England, Germany and France.

J. P. Loines, M. D., of New York, is probably the most ex-

perienced vaccinator in America. For a number of years he has been vaccine physician to the Eastern Dispensary, and to the Quarantine of the Port of New York. He bears the following testimony:

"As vaccine physician to large public institutions, and also to quarantine, my numbers vaccinated during the past fifteen years have been considerably over 200,000, and I have not yet heard of a case of variola or varioloid occurrring to any whom I pronounced vaccinated."*

The late Dr. Parkinson served as a distinguished vaccinator for about sixteen years to the New York Dispensary; his aggregate was about 40,000; and his evidence was that none had taken small pox after his vaccination.

Edwin M. Snow, M. D., Superintendent of Health of the city of Providence for the past fifteen years—one of the most careful and competent officers in our country—in his published Report on Small Pox and the Protective Power of Vaccination, April 26, 1869, says:

"We often see statements in the public papers that vaccination has lost its protective power against small pox, or that it has run out, implying that the vaccine virus has lost, either in kind or in degree, some of the properties that it possessed when first discovered. * * * There is not one particle of truth in them. The character and properties of vaccine virus are as perfect, and its protective power against small pox is as certain and effectual, as it was when first discovered by Jenner.

"The operation done in the same way in Providence to-day, as described by Jenner, produces precisely the same local and constitutional effects, and the most skillful and minute professional examination of the vesicle day by day, can not discover the slightest variation from his description. During the past fourteen years, 10,464 persons have been vaccinated in my office. During the same fourteen years I have myself given certificates of vaccination to 16,332 children to enter the pub-

*Report of the Metropolitan Board of Health, New York, 1868, p. 351.

lic schools. During these same years I have known of nearly every case of small pox in Providence, and I have visited the greater portion of them myself, and I have never, during this time, seen or heard of a single case of small pox in any scholar in the public schools who had received a vaccination certificate."

The efficient Health Officer of Cincinnati, Wm. Clendenin, M. D., in a report made to the Board of Health, July 27, 1869, says:

"The testimony in favor of vaccination, as a preventive of small pox, is so conclusive and universal, that no unprejudiced mind would think of calling it in question; and if any additional evidence was needed on this point, it is furnished by the last epidemic of small pox in this city, during the year past. Not one death occurred from small pox in which there was unmistakable proof that the individual had been previously properly vaccinated, while, on the other hand, fully ninety per cent. of those who died of small pox (six hundred and forty-four) during the last fiscal year, had not been vaccinated. We are, therefore, driven to the conclusion that the lives of five hundred and eighty persons, who died during the past year in this city, might have been saved by vaccination alone. This is certainly a very remarkable instance of criminal neglect of duty, or of ignorant, bigoted prejudice."

In the year 1816 Jenner wrote that he was producing vaccine vesicles which were "in every respect as perfect and correct in size, shape, color, state of lymph, the period of the appearance and disappearance of the areola, its tint, and, finally, the compact texture of the scab, as they were in the first year of vaccination; and, to the best of his knowledge, the matter from which they are derived was that taken from a cow about sixteen years ago." This same stock of lymph, taken from the cow by Jenner himself, more than fifty years ago, has been perpetuated by arm to arm vaccination in the national vaccine establishment of England; and Dr. Seaton, in writing of it in his "Handbook of Vaccination," says: "From daily opportunities of observatian, I can affirm that

it has not lost anything of its infective power, and that the vesicles produced by it correspond accurately in the character and course with Jenner's description."

Recently this same lymph was used in five vaccination stations in London, Liverpool and Birmingham; 446 punctures were made, and 443 typical and perfect vesicles were produced, such as protect against small pox infection.

Marson, Ceeley and others, testify to having used the same stock of lymph, and obtaining the same results exactly that Jennner did over fifty years before.

I have before me a letter from a correspondent in Vienna, a pupil of Hebra's, which informs me that there is now in use in the Findel-Anstadt, Vienna, vaccine matter which has not been renewed by passing through the cow for *seventy years.*

The original matter was taken from the cow, by the superintendent of the institution, in the latter part of the last century, when vaccination was first introduced, and has been used there ever since—that is, its successive products.

M. Guerin, in the discussion before referred to, in the French Academy, stated that the degeneration of human vaccine ymph had not been proven. On the contrary, it had been demonstrated that it is possible for human lymph to retain the same properties to day as at the beginning.

The limits of this report will not allow me to adduce additional evidence; sufficient, however, has been presented to permit me to rest the consideration of the question on the proposition of Dr. Austie, viz: we take it that there seldom was a fact better established in medicine than this, that given (*a*) a certain amount of skill in the vaccinator, and (*b*) lymph derived from a stock which has been carefully passed through healthy and susceptible individuals, as perfectly satisfactory results can be obtained from the oldest stocks of lymph as from the youngest, or from the cow itself.—(*Practitioner*, Oct. 1869.)

It may be well just here to call attention to the fact that there are portions of every community who regard themselves vaccinated, but who have no more protection against small

pox than if the operation of so-called vaccination had not been performed on them. There are two reasons to account for this: first, the law does not prescribe the qualifications of vaccinators; hence, incompetent persons, who cannot distinguish a vaccine vesicle from an ordinary sore, make it a part of their calling to perform the so-called operation of vaccination. 2d. Many physicians are careless, and disregard the important duty of observing the evolution and maturation of the vaccine disease. As a rule, they make but one visit, and that at the time of the operation. This habit is in part due to the community at large, who look upon all visits of observation as supernumary, and are disinclined to pay for them.

There is another very serious impediment to perfect vaccination, and that is the difficulty of securing reliable matter. Ohio, with over 3,000,000 inhabitants, has not, by State or municipal enactment, provided for a *vaccine establishment* in all her domains, to which her physicians, in an extremity, or in the presence of an epidemic of small pox, can apply to for reliable vaccine virus; when, but for the exemption given by vaccination, the average number of deaths from small pox in Ohio, would be over 9,000, and a greater number would be disfigured, or made blind, or scrofulous for life.*

The irregular demands for vaccination made upon the practitioner are such that it is impossible for him to keep a continuous supply of fresh vaccine on hand; consequently, there are periods in every year when he is entirely without it. When an exigency arises demanding it, he applies to his neighboring professional brethren, and if they fail him, as they are likely to do, his last and only resort, is the city apothecary. How, when and where the druggist obtains it, is a secret known only to the trade.

Several questions pertaining to the steps necessary to secure the fullest effects of the vaccine may be mentioned.

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*The average annual number of deaths from small pox in England, before the discovery of vaccination, according to the calculation of Dr. Lettsom, was 3,000 out of every million of the population.

First as to the virus, should it be the eighth day lymph or the matured dry scab. 2d the number of insertions necessary to secure full infection.

The profession in our country generally use the matured scab. This habit, I think, is more from necessity than choice. Drs. Loines, Logan and other experienced vaccinators give the preference to the eighth day lymph. In England and on the Continent the use of the eighth day lymph is the rule.

With reference to the number of insertions, I think I am safe in saying that the majority of our physicians make but one, and that by scarifying a surface about 1-4 of an inch in diameter; and their experience thus far has been favorable. Nevertheless the statistics of competent and attentive vaccinators in England, prove that four insertions are necessary for the greatest protection.

The following table of Mr. Marson, based on 5,000 cases of post-vaccinal small pox, observed in the hospital in the years 1836–55, is conclusive on this point:

CLASSIFICATION OF PATIENTS AFFECTED WITH SMALL POX.

(Number of Deaths per cent. in each class respectively.)

1. Unvaccinated	35.00
2. Stated to have been vaccinated, but having no cicatrix	25.57
3. Vaccinated:	
a. Having one cicatrix	7.73
b. Having two cicatrices	4.70
c. Having three cicatrices	1.95
d. Having four or more cicatrices	0.55
a. Having well marked cicatrices	2.52
b. Having badly-marked cicatrices	8.82
4. Having previously had small pox	19.00

In 1863, during the epidemic of small pox then raging in London, Dr. Seaton and Dr. Buchanan made an examination of upwards of 50,000 children in schools and workhouses, with the view of ascertaining what proportion was unvaccinated. His classified table, giving the results of this investigation, on page 249 of his "Handbook of Vaccination," essentially confirms Marson's observations.

The success of re-vaccination is spoken of as an evidence of the degeneration of human vaccine. Those who place any stress on this argument must remember that small-pox often attacks the same person twice, and that of those attacked the second time 19 per cent die; while but a fraction over one-half of one per cent (.55) of those who have been thoroughly vaccinated die from small-pox.

It is a well established fact that a thorough vaccination protects a large majority of mankind through life, yet there are individuals in every community so susceptible to variolous poison, that neither a vaccination nor a previous attack of small-pox will give complete exemption from future attacks of small-pox. As medical science cannot designate who belong to the former and who to the latter class, it will be a safe rule for all to submit to the operation of vaccination until the system refuses to take it, and afterwards be re-vaccinated upon every exposure to contagion. Some authorities recommend re-vaccination every five years, and others think the performance of it just after the establishment of puberty is sufficient.

In the standing armies of those countries were re-vaccination is compulsory, as Prussia, Wurtemberg and Bavaria, small-pox has almost if not entirely disappeared.

3d. ANIMAL VACCINATION.

Will Animal vaccination give any greater protection against small-pox, than human vaccination?

Vaccination with primary cow-lymph is but seldom performed, on account of the severe constitutional effects which attend its evolution. With a view of modifying these effects, which experience has proven bear no relation to the protection given, and were not essential to it, the primary cow-lymph is passed through a succession of heifers and then transplanted to the human subject, and this is termed *Animal Vaccination.*

Those who favor animal vaccination assign the following reasons for so doing:

1. The vaccine virus loses its protective qualities by successive transmission through the human subject.

2. Human vaccine may convey other diseases than vaccinia, particularly syphilis.

3. Animal vaccination is the surest method of obtaining and transmitting the vaccine virus in its original activity, without any danger of syphilitic taint.

Those who oppose it, say that the above claims are mere assumptions which time and experience alone can establish. On the contrary, it is claimed that the experience of the past seventy years has demonstrated:

1. That vaccine virus improves upon each remove from the cow or heifer, until it is fully humanized. Then it presents the Jennerian aspect, and has arrived at its full period of maturity, when its infection and protection are the greatest.

2. Animal vaccine is more uncertain in producing infection, is more violent in its effects, when successful, and gives no greater immunity against small-pox than human vaccine.

These latter propositions are fully sustained by the testimony of those physicians of our country who have given the most attention to the subject of vaccination.

The English authorities are almost a unit in support of them. Dr. Seaton, in his *Handbook on Vaccination*, calls attention to the fact, that the primary cow lymph obtained at Beaugency, in 1866, after passing through three heifers, was used at the Academy of Medicine, Paris, and was found to improve by a few transmissions through the human subject. When some of it thus humanized, and some of it continued through animals, were used in the vaccinations of the same subjects, the vesicles of the humanized lymph were manifestly the finer and better developed.

Hebra may be cited as an authority, if not an exponent of the German profession. Concerning him, my Vienna correspondent, before alluded to, writes: "In regard to Hebra's opinion about vaccination, I can only state that it is the same

as that which prevails mostly in the medical world now. * * * Further, no return to the cow for fresh matter is necessary. The lymph derived from the cow is not nearly so certain to infect, is much more violent in its operation when it does succeed, and has no more protective power.

Animal vaccination has had a strong hold on France for the past six years; indeed so general has its use become, that, to-day, human vaccine lymph can scarcely be found in any part of its territory.

M. Depaul, the official Director of Vaccination, espoused animal vaccination in 1864. Since then, his eloquent tongue and fertile pen have made all France run wild upon the subject. I have now before me nine elaborate papers, which he has very kindly sent me, written by him at different times, between 1864 and 1870, strongly advocating Animal Vaccination, the degeneration of human lymph, and the conveyance of syphilis by means of the latter.

From the first, these views met with a powerful and persistent foe in the person of M. Jules Guerin. He contends that a comparison of the evolution of the two vaccines evince a marked superiority in favor of human vaccination, and allow us to infer a like superiority for its preservative virtue.

Jennerian vaccination, he says, is cow-pox spontaneously modified by the human organism — that is humanized. Animal vaccination is the artificial inoculation of cow-pox in the heifer, and direct vaccination from the heifer to man, without the intervention of the human element. He cites statistics to show that the success of animal vaccination compared with human vaccination, is as ten to thirty. Nevertheless, animal vaccination became popular, and all France bowed down and worshiped the Calf.

The general use of animal vaccine in France, during the past six years, affords an opportunity, on a grand scale, of testing the comparative merits of the two vaccines.

Fortunately, we have a standard for comparison afforded us in Ireland, where vaccination was made compulsory in 1864, the same year that animal vaccination was introduced

into France. In Ireland the vaccine lymph used was that furnished by the National Vaccine Establishment, which, as I have before stated, was obtained by Jenner himself from the cow, and has been perpetuated ever since by human transmission.

If the protective virtue of animal vaccine against small pox is superior to human vaccine, we may expect to see it demonstrated by fewer cases of small-pox occuring in France, in proportion to its population, than in Ireland, during the period of 1864–70.

Let us examine Ireland first.

The following table is kindly furnished me by no less a person than the MEDICAL INSPECTOR OF THE PRIVY COUNCIL, England, Dr. Seaton, and is official:

AVERAGE ANNUAL DEATHS FROM SMALL-POX.

From 1850 to 1860 ..... 1,272 (Lowest year 863)

Vaccination was made compulsory from January 1, 1864.

Year.	Deaths from Small-pox.
1864	854
1865	347
1866	187
1867	20
1868	19
1869	3

"There is not now (April 9, 1870), and has not been for nearly a year, any small-pox at all in Ireland."—*Seaton.*

Now let us turn to France and see how effectually animal vaccination has protected her from small-pox. The *British Medical Journal*, March 26, 1870, publishes a letter from its regular Paris correspondent, from which I extract the following: "In writing to the *Journal* on the 18th of October last, I alluded to the alarming prevalence of small-pox, the consequent panic, and the consequent demand for re-vaccination. Since that date the epidemic has continued; and latterly not only in Paris but also in other towns in France it has assumed formidable proportions and produced intense social uneasiness." April 30th, the same correspondent writes: "Animal

vaccination has been a failure in this epidemic." For the week ending May 14th there were 179 deaths from small pox in Paris, exclusive of deaths in hospitals—population, 1,825, 274. (In London for the same week there were two deaths from small-pox—population, 3,170,754.)

The results of the comparison, then, may be briefly stated: *Human vaccination* made compulsory in Ireland in 1864. On April 9th, 1870, there was not a case of small-pox in all Ireland, nor had there been for more than a year.

Animal vaccination adopted in France in 1864. May 14th, 1870,* there is a formidable epidemic of small-pox prevailing in France which began in October, 1869, and shows no signs of abatement.

The French people are alarmed and all Paris is placarded with warnings of the small-pox, and the necessity of vaccination. Upon every corner gaudy posters inform you that certain doctors are prepared with heifers and will vaccinate from them at certain hours. Their offices and the adjacent streets are said to be thronged daily with an immense multitude seeking protection from small-pox by means of the calf. It has been estimated that Dr. Lanoix, one of the more popular vaccinators, has received 10,000 francs in one day from vaccinations. His worship of the heifer, and his beautiful street corner posters, have not been in vain.

Not to detain you with details I will say, that after an unparalleled faith in animal vaccination, and after a terrible opportunity of testing its merits, the French physicians and people are losing confidence in it, and are returning to human vaccination.

Very recently the medical officers of the Bureau de Beinfaisance of the Seventh Arrondissement of Paris, have unanimously adopted and signed the following declaration in favor of human vaccination:

"We, the undersigned, medical officers of the Bureau de Beinfaisance of the Seventh Arrondissement, after examining,

* Atlantic cable dispatch to the press, received just as this Report goes to press:
PARIS, July 1.—There is no apparent diminution in the ravages of the small-pox.

watching, and comparing the results of the vaccination service established at the Marie of the Seventh Arrondissement with vaccine lymph taken from the heifer, are of the opinion that the results are most unsatisfactory, even in the case of infants; and that this system ought to be discontinued; and request that Jennerian lymph be placed at their disposal."

I shall close this division of my report by quoting from *La France* a just tribute to a great man: "There are occasions when it is a duty resolutely to fight against the opinions of the many and to show an uncompromising front to prejudices. It is in this spirit that for many years past M. Jules Guerin has, without truce and without giving an inch, conducted his brilliant campaign against animal vaccine. A campaign which has at last been crowned with success. The question is now definitely adjudicated, animal vaccine has fallen."

4th. VACCINAL SYPHILIS.

Is there danger of conveying other constitutional affections, than vaccinia, by means of human vaccine lymph?

Over seventy years have elapsed since the introduction of vaccination by Jenner. The majority of the population of the civilized world have been vaccinated. If the vaccine lymph will convey constitutional diseases other than vaccinia, its wide spread use during these seventy years, will show a large increase of constitutional affections.

A careful examination of the record for this period does not show that there has been such an increase. On the contrary, statistics, according to Farr, Greenhow and others, prove that scrofula and other constitutional diseases have diminished, and that the average duration of life has been extended since the introduction of vaccination.

The *British & Foreign Medico-Chirurgical Review*, for Jan. 1869, makes the following statement, page 126: "It cannot be disputed that the average tenure of life has been lengthened by vaccination, and that a most horrible and disgusting disease (which, where it did not kill, often rendered its victim blind or deat, and generally hideous for the remainder of life) has been well nigh exterminated."

Niemeyer, of the university of Tubingen, in his recent work on Practical Medicine, says on page 553, vol. II: "All objections to vaccination, even if well founded, would have to give way to the facts proved by statistics, that in the last century one-tenth of the population died of small-pox (about 400,000 people dying of the disease every year in Europe), another one-tenth were disfigured by the disease; and that since the introduction of vaccination, the general mortality is less, and that of small-pox is reduced to a minimum."

There are certain cutaneous eruptions which may follow the operation of vaccination, just as they may follow teething, or any other slight constitutional disturbance. Mr. Padget pointed out this fact twelve years since, when he wrote that "multitudes of children are naturally predisposed to the commoner eruptions, and that vaccination is only one of many trifling constitutional irritations, which might have precipitated the first appearance of such eruptive diseases;" and more recently Niemeyer, in his Practical Medicine, says: "We know that blisters and other irritants to the skin, not only induce inflammation at the point of application, but also increase the predisposition to other cutaneous affections. Many children who have never previously suffered from any exanthema, are affected for months with moist eczema of the face, after having their ears pierced, as well as after vaccination."

Vaccine lymph, when long exposed to air and moisture, will undergo the same putrefactive changes that any other animal matter does when similarly exposed, and if inserted in the arm of a subject will produce the same effects that any other putrid matter will produce. When erysipelas or pyæmia follow the use of decomposed lymph, the vaccine is not at fault, but the vaccinator, who has been criminally careless or criminally ignorant.

The advocates of transmission, however, do not press these minor points, and seem, indeed, to have abandoned their claim for the transmission of all constitutional diseases but that of syphilis; upon this one disease they rally their full

strength. I shall, therefore, now invite your attention to the consideration of the possibility of engrafting syphilis by means of Jennerian vaccination.

It is a fact worthy of notice, that a large majority of all the reported cases of vaccinal syphilis have occurred in France and Italy. In England, where vaccination is more systematically pursued, and where the official inspection, to which it is subjected, would render the escape of any abnormal development of the vaccination impossible, there are but a very few cases reported.

Whether or not syphilis, independent of vaccination, is more prevalent in France and Italy than other countries, is a consideration of some moment in its bearing on this question. An affirmative answer might suggest a satisfactory solution of vaccinal syphilis, so far as these two countries are concerned, without implicating the vaccine lymph.

According to Padget, the transmission of syphilis by means of vaccination is approved by pathological considerations. Such pathologists as Rokitansky, Skoda and Hebra, maintain that the insertion of a matter containing the virus of two different affections, is followed by the production of but one disease. That is, if the matter used be a mixture of syphilitic and vaccine virus, either distinct syphilis or distinct vaccinia is the result, not both of them.

It is opposed by direct experiments. Lymph intentionally taken from a vaccine vesicle on a syphilitic subject, produced only vaccination.

M. Debzenne recently reported in the Imperial Academy of Medicine, Paris, that in 1865 he had inoculated himself twice with vaccine from syphilitic subjects, and the result was negative. In September, 1866, he vaccinated a syphilitic patient, 21 years old, "who had numerous ulcerated, hypertrophied papules in vulva and perineum, a general eruption and mucous patches in mouth and throat." On the eighth day he vaccinated himself in four places with the virus from this patient, and the result was negative. He also at the

same time vaccinated seven females (free from syphilis) with the same lymph, the effect, so far as syphilis was concerned. was entirely negative; four responded perfectly to the vaccine.

M. Bourguel reported twenty cases whom he had vaccinated with lymph from the arms of two syphilitic subjects, and the result was negative for syphilis. M. Guerin reported fifty-five experiments combining all the characters of scientific experiment, which responded negatively to the artificial production of vaccinal syphilis.

These confirm the experiments previously made by Cullerier, Taupin, Heim and others.

If, however, the matter from a chancre be accidentally or intentionally inserted in the arm of a person, it will produce syphilis, but the lymph from a vaccine vesicle on the arm of a syphilitic subject, will only produce vaccinia. Just as the lymph from a vaccine vesicle on a patient who is broken out with small-pox, (the vaccination having been performed too late for protection) will only produce vaccination, whilst the pustules by its side will produce small-pox.

It is opposed by the experience of the greatest vaccinators and syphilographers. West, with an experience of 26,000 vaccinations; Marson, with 40,000; Sir W. Jenner, with 13,000; Seaton, with 50,000; Tomkins, with 50,000; Parkins, with 40,000; Loines, with 200,000; Clendenin, with 16,000; and many others who might be named, have never met with a case of vaccinal syphilis.

The following question was addressed by Mr. Simon, in 1856, to the most distinguished medical gentlemen of Germany, France and Great Britain:

"Have you any reason to believe or suspect that lymph from a true Jennerian vesicle has ever been a vehicle of syphilitic, scrofulous, or other constitutional infection to the vaccinated person?"

Near six hundred replies were received, and they were almost unanimously in the negative; among whom were Padget, West, Marson, Tomkins, Acton, Lee, Parker, Chomel, Bright, Watson and Brodie.

A large proportion of the reported cases of vaccinal-syphilis rests upon insufficient or defective evidence; and the remainder may be reasonably accounted for, without compromising the vaccine, on the grounds, (1) of the influence of prevailing diseases: (2) a cachectic diathesis, and (3) latent constitutional syphilis.

Vaccinal-syphilis had but few advocates, either in or out of the profession, until the so-called epidemics of "Rivatta," in 1861, and subsequently of "Auray," (Provinces of Italy and France,) made their appearance. These epidemics aroused the attention of the profession, and led to a thorough investigation of the causes which produced them.

Concerning the "Rivatta" cases, Ricord says: "For our part, an attentive perusal of the documents of the case has led us to the same conclusion as Dr. Abertetti, who exonerates from all blame the vaccination in question."

With reference to the Auray epidemic, Dr. Anstie, in the Practitioner of November, 1869, says: "Upon the whole evidence, we say decidedly, that it is not proved that the epidemic of Auray was an epidemic of syphilis at all, far less that it was an epidemic of vaccine-syphilis."

Dr. Seaton calls attention, in his Handbook, to the fact that long before vaccination was heard of, Astruc recorded epidemics of syphilis which were to the full, as disastrous and as unaccountable as that of Rivatta.

In the recent discussion in the French Academy, M. Depaul, Director of Vaccination, reported a large number of cases of vaccinal-syphilis, as having occurred in the Arrondissements of Lorient and Vannes.

M. Fouquet stated that there were other vaccinations in those districts with accidents analogous to those reported by M. Depaul, viz: Highly inflamed pustules, large, deep ulcerations, abundant eruptions, etc., but that these accidents had not an impure origin, and presented nothing suspicious, although the characters noted by him, had the greatest analogy with those reported syphilitic by M. Depaul.

M. Guerin asserted that the explanation of those cases of

M. Depaul was to be found in the general erysipelatous, diathesis prevailing in those departments. He called attention to the fact that any local irritation would develop a latent constitutional taint, and said that *vaccination would not be a port of entry for syphilis, but a means of exit.* In support of the assertion that prevailing diseases modify vaccination and produce suspicious sores, he referred to the work of M. Lalagade, Director of Vaccinations of Tarn. On May 25th, he vaccinated 95 children with lymph from a healthy child. On June 6th a number of them were found in a sad condition; "the skin was of a deep red, with erysipelatous aspect, vaccinal pustules very large and greyish white, black crusts all over the body except the soles of the feet and on the genital organs; one was covered with red patches, similar to measles; another had, the day after vaccination, a large bulla filled with serum." There was also an epidemic of pemphigus complicating the inoculations. On inquiry into the public health in the neighborhood, he found erysipelas, diphtheritic angina, malignant pustule, wounds with sanious bases, and numerous cases of pemphigus. On April 10, 1860, he adds: "I am happy to say that to day none of the children who were vaccinated May 25, 1868, bear even a doubtful trace of syphilitic disease, and that none of them had undergone specific treatment.

M. Guerin concludes, on this point, by observing:

1st. That vaccinal-syphilis up to this time fails in the majority of points, which would support a belief in such an origin.

2d. That experiments instituted to determine the possible inoculation of vaccinal-syphilis, are quite contrary to the doctrine of syphilitic vaccination.

3d. That among a large number of alleged facts of vaccinal-syphilis, most, if not all, belong to another order of pathological influences.

And, further along in the discussion, he asserts that the causes which are likely to vitiate vaccine, and give it the false appearance of syphilis, are of a nature to exercise their

influence equally upon human and animal vaccine. These causes, foreign to the vaccinifer, are either exterior to the subject vaccinated, or inherent in his constitutional state—both more or less susceptible of being determined, prevented or combated.

I recently addressed a letter to Dr. J. K. Barnes, Surgeon General U. S. Army, asking him if there was any evidence on file in his office which reported the existence of any vaccinal-syphilis among the 2,000,000 soldiers who took part in the late American war. In reply, he very kindly wrote "that quite a number of papers are on file in this office bearing on the subject of foul ulcers following vaccination, and supposed by some to be due to the contamination of the matter employed with syphilitic virus. I have made a preliminary examination of these papers, and have arrived at the conclusion that their general tenor is directly opposed to this supposition."

Prof. J. Jones, of New Orleans, has published a paper on "Spurious Vaccination," based on materials furnished by the Confederate Army. His conclusions agree with those of the Surgeon General, in exhonerating the vaccine from blame, and referring the foul ulcers which attended vaccination in the army to the fatigue, exposure, uncleanliness, insufficient and improper diet, etc., incident to a soldier's life, which resulted in a cachectic diathesis.

Wm. Clendenin, M. D., Medical Director of Hospitals, U. S. A., at Nashville, during the late war, and at the present time Health Officer of Cincinnati, has furnished me a report of his views on vaccination. His experience and opportunities for personal inspection of the ulcers, and so-called cases of vaccinal-syphilis, which followed vaccination in the U. S. Army, were so great, that his views concerning them will be of value. His conclusions fully accord with those above expressed.

In reply to my inquiry Dr. Seaton, in his letter of April 9th, writes: "I am not aware of any fresh cases of alleged introduction of syphilis by vaccination with humanized lymph, since I published my book, but curiously enough there has

been discussion lately in France on some cases of syphilis in children, who had been vaccinated with animal lymph. Of course the syphilis was a latent syphilis, and the vaccination could have had nothing to do with it, except perhaps to hasten its evolution; but the cases are instructive, and point, in my opinion, to the explanation of all the alleged cases of vaccine syphilitic inoculation with humanized lymph, except those in which there was downright carelessness and mixture or substitution of viruses."

This opinion of Dr. Seaton is supported by M. Guerin's terse assertion in the Academic, that "Vaccination is not a port of entry for syphilis, but a means of exit;" and by the Medico-Chirurgical Review, Jan. 1869, which says: "It is not the vaccination but the parentage which is at fault."

I will close this section of my report by quoting the declaration of Dr. Austic, in the Practitioner of November, 1869: "*Vaccine syphilis is a bugbear and a phantom.*"

RECAPITULATION.

1st. When care is exercised in the selection of subjects, there is no evidence that vaccine virus has lost its activity or prophylactive effects by continued human transmission. On the contrary, the Jennerian lymph, now in use in the British Vaccine Establishment, and the "Findel Anstadt," Vienna, demonstrates that its virtues are retained. The former was taken from the cow over 50 years ago, the latter 70 years.

2d. The evidence of the profession of England, Germany and America, is to the effect that lymph direct from the cow is not so certain to infect, is much more violent when it does succeed, and has no more protective power than human lymph. In France, where animal vaccine has been in general use for the past six years, it has not given any greater protection against small-pox. On the contrary, it seems to have given less, and the French are now returning to the practice of human vaccination.

3d. The transmission of constitutional affections, particularly syphilis, by means of the vaccine virus (*a*) is opposed by statistics, which report a reduction in constitutional affec-

tions, and an extension of the average duration of life, since the introduction of vaccination.

(*b*) It is opposed by the experience of the greatest vaccinators and syphilographers.

(*c*) It is opposed by Pathology.

(*d*) It is opposed by the "*experimentum crucis*"—the use of lymph from the arms of syphilitic patients.

4th. A large proportion of the alleged cases of vaccinal syphilis are based on insufficient or defective evidence, the remainder may be reasonably accounted for, without compromising the vaccine, on the grounds—

(*a*) of the influence of prevailing diseases;

(*b*) a cachectic diathesis, and

(*c*) latent constitutional syphilis.

RESOLUTIONS.

My investigations have more profoundly impressed me with the greatness of the boon which the immortal Jenner has given to man. It has saved the lives of millions of human beings and preserved from blemish the human face divine of million others.

As humble followers in the noble profession that Jenner honored, we would not be true to our profession or loyal to his memory, if we did not zealously labor to make every human being a partaker of his great gift.

England has demonstrated that it is possible to exclude small-pox from her domains by legislative enactment. Would it not be a high honor for the Ohio State Medical Society to initiate a movement which might ultimate in placing America in the front rank with England? Great reforms move slowly, but a combined and persistent movement of the disciples of Jenner would sooner or later accomplish it. In furtherance of this object I would recommend the adoption of the following resolutions:

Resolved, That the Ohio State Medical Society appoint a committee, to consist of five members, and one corresponding member from each county in the State, to prepare and present a memorial to the Ohio Legislature, praying for the enactment

of a law which will require all pupils of the public schools and other educational institutions, supported in whole or part by state or county tax; and all inmates of asylums, hospitals, reform and correctional schools, work-houses, jails, penitentiaries, &c., supported at public expense, to be vaccinated upon admission to the several establishments, unless satisfactory evidence is furnished to a competent inspecting physician that the parties are fully protected by a previous vaccination.

Resolved, That it be made the duty of boards of health, where they exist, and county commissioners where they do not, to appoint a qualified medical officer who shall semi-annually inspect the pupils of public and other state schools and furnish a certificate of vaccination to those who are fully protected, and gratuitously vaccinate those who are not; and no pupil shall be allowed to continue in said schools who has not received a certificate of vaccination.

The several boards having control of the state or county charitable, reformatory or correctional institutions, shall appoint, each, a qualified medical officer who shall vaccinate all the inmates of the said institutions, without respect to any previous vaccination; and all persons admitted thereafter shall be vaccinated immediately upon their admission, and such persons as are confined for a term of years or for life shall be re-vaccinated every five years.

Resolved, further, That the Legislature be petitioned by the same committee to pass a law requiring all cities of the first class to establish and support vaccine establishments for the purpose of cultivating and having constantly on hand reliable vaccine virus.

Resolved, further, That the Legislature be petitioned to make it a penal offense for any persons but regularly educated physicians to perform the operation of vaccination.

ACKNOWLEDGMENTS.

I cannot close without acknowledging the valuable aid which has been so kindly rendered me in the preparation of this Report by the following gentlemen:

Edward C. Seaton, M.D., England; J. K. Barnes, M.D.. U. S. A.; M. Depaul, M.D., Paris; Mr. Washburn, American Minister, Paris; Col. W. Hoffman, Sec. of Amer. Legation, Paris; J. T. Webb, M.D., Berlin; C. D. Cutler, M.D., Vienna; Wm. Clendenin, M.D., Cincinnati; Wm. Carson, M.D., Cincinnati; J. T. Whittaker, M.D., Cincinnati.

APPENDIX.

A.

Letter from Edward C. Seaton, M.D., Medical Inspector of the Privy Council, England.

No. 8, Richmond Terrace,
Whitehall, April 9, 1870.

Dear Sir—I regret that absence from town on duty and other circumstances have rendered it impossible for me to reply till now, to the letter I received from you about three weeks ago.

Nothing, whatever, has occurred since the publication of my "Handbook of Vaccination" to induce me to modify or change my opinions on the subject as therein expressed.

But the view I have there taken with regard to the alleged degeneration of lymph has been greatly strengthened by the observations I made in an official visit last autumn to the Continent, with the view of comparing the results of animal vaccination as practised in Paris, Brussels and Rotterdam. With the result of vaccination as carried on from arm to arm, with our long-current humanized lymph at the public vaccination stations in England, I found that "animal vaccination," notwithstanding what had been said to the contrary by its partizans, takes *with very much less certainty and completeness, indeed, than vaccination from child to child;* that the vesicles produced by it are not finer, but if anything rather smaller than our own; that these vesicles run their course in the same period as ours, the crusts forming and detaching at the same dates; and that the cicatrices resulting are in no respect better characterized than those produced by our (old

Jennerian) lymphs. The animal lymph, with which the vaccinations seen by me had been done, was said to be lymph transmitted through calves without interruption from an original source obtained at Beaugency in 1866.

These observations are not, in my opinion, inconsistent with the fact that this same Beaugency lymph when used in 1866, at only a few removes from its original source, by the commissioners of the French and Belgian academies, manifested a greater intensity of local action, and produced vesicles which ran a longer course than the humanized lymph they had then in use. Exactly the same happened, as you will see related in my Handbook, with the Passy lymph and with Estlin's lymph for the first year or more of transmission through children. But these peculiarities (which after all attach only *to some stocks* of primary lymph) appear to be lost just as much by artificial transmission through calves as through human subjects. Even, then, if they contained any thing at all essential to the completeness of the vaccine protection, they cannot be perpetuated. But there is really not the slightest reason that I am aware of for supposing that they do contain anything essential. Mr. Gillham's experiments tend to show that it is not so.

My report on this subject will form part of the forthcoming annual volume of our Department; it must not, I fear, be looked for before August.

I am not aware of any fresh case of alleged introduction of syphilis, by vaccination with humanized lymph, since I published my book, but curiously enough there has been discussion lately in France on some cases of syphilis in children who had been vaccinated with animal lymph. Of course the syphilis was a latent syphilis, and the vaccination could have had nothing to do with it, except perhaps to hasten its evolution; but the cases are instructive, and point, in my opinion, to the explanation of all the alleged cases of vaccine-syphilitic inoculation with humanized lymph, except those in which there was downright carelessness and mixture or substitution of viruses.

The progress of events since I published my book has greatly added to the proof of the value and importance of compulsory vaccination.

To the facts about Scotland, mentioned at the end of § 95, (chap. xi.) it may be added that the mortality from small pox in 1867 was only 124, and in 1860 was only 25; the 1869 returns are not yet made up. Still more striking are the facts regarding Ireland, as you will see by the subjoined:

In 1850–60 the average annual number of deaths from small pox was 1,272. Lowest year, 863.

For 1860–63, no statistical return of deaths, but the dispensary returns showed increased prevalence.

Vaccination was made compulsory from Jan. 1, 1864. The effect of the compulsory act began to be seen about the middle of this year.

YEAR.	SMALL POX DEATHS.
1864	854
1865	347
1866	187
1867	20
1868	19
1869	3

There is not now, and has not been for nearly a year, any small pox at all in Ireland. In England we are getting on very well with our act, (of more recent date) notwithstanding much greater obstacles than in the other divisions of the kingdom, and the existence of an anti-vaccination league. * *

I am, dear sir,

Yours very faithfully,

EDWARD C. SEATON.

Dr. WM. B. DAVIS.

B.

Letter from J. K. Barnes, M. D., Surgeon General U. S. Army.

SURGEON GENERAL'S OFFICE,
Washington, D. C., March 23, 1870.

BVT. MAJ. GEN'L J. K. BARNES, *Surgeon General U. S. A.:*

GENERAL:—In reply to the within inquiry of Dr. Wm. B. Davis, I have the honor to state that quite a number of papers are on file in this office bearing on the subject of foul ulcers following vaccination, and supposed by some to be due to the contamination of the vaccine matter employed with syphilitic virus. I have made a preliminary examination of these papers, and have arrived at the conclusion that their general tenor is directly opposed to this supposition.

Three of the reports are by surgeons who evidently supposed the disorder in question to be due to syphilitic taint.

Surgeon George H. Hubbard, U. S. Vols., Medical Director of the District of the Frontier, reported, February 15, 1864, that a number of cases of foul ulcers following vaccination had occurred among the men of the 1st Arkansas infantry. He expresses the opinion that these ulcers were due to the men having been inoculated with virus of a "syphilitic character," and states that some similar cases had occurred in the Indian brigade stationed at Fort Gibson. He says that nearly all the cases required constitutional as well as local treatment, but does not state that symptoms of secondary syphilis appeared in any of them.

Surgeon J. Walton, 21st Kentucky Veteran Volunteers, reports from Cleaveland, Tennessee, March 31, 1864, that he has had several cases of suspicious ulcers of the arm in his regiment, due, as he suspects, to inoculation with matter taken from a syphilitic patient, although of this he has obtained no proof, the men having been vaccinated while at

home on furlough. He also fails to mention any symptoms of secondary syphilis occurring subsequently.

Surgeon Alex. Shaw, 29th Iowa Volunteers, reports in his monthly report for July, 1864, that fifty six (56) cases of abnormal vaccination had occurred in the regiment. At first he suspected the disorder to be syphilitic in its origin, but the generally favorable results led him to give up this opinion. Surgeon Shaw states that dysentery and diarrhœa had been somewhat frequent, and that scurvy was quite prevalent among the men of the regiment. He mentions no subsequent symptoms of secondary syphilis.

With the exception of the above papers, the whole of the evidence on file is in the opposite direction.

Among the most important of the documents may be mentioned the report of Surgeon Charles S. Tripler, Medical Director of the Northern Department, who states, June 16, 1864, that his attention has been drawn to complaints with regard to so-called impure vaccine matter, the use of which was followed, in a large number of cases, by ulcers of considerable size, which were painful, obstinate, and thought to resemble syphilitic sores. Most of these cases occurred in the prison depots—Camp Douglas, Rock Island, and Camp Butler—among the rebel prisoners of war. Inquiry showed that these men were suffering to a considerable extent from from scurvy, and that the very same virus was used on the United States troops who were in better health, and produced no such sores. The general result of the investigation was to satisfy Dr. Tripler that the ulcers complained of were not syphilitic, but resulted from normal vaccine matter inoculated in persons of cachetic and debilitated constitutions.

The report of Surgeon Tripler and the documents accompanying it are in every way calculated to inspire confidence.

An elaborate report of the same tenor has been communicated by Dr. S. E. Habersham, late a surgeon in the Provisional army of the Confederate States, through Surgeon J. Campbell, U. S. A., Medical Director of the Department of Georgia, April 13, 1865. His paper is a copy of a report

made by Dr. Habersham, in November, 1863, while in charge of the Chimborazo Hospital (Confederate). He states that he has observed a number of cases of vaccination followed by foul phagedenic ulcers resembling syphilitic phagedena. In a few cases only was there enlargement of the proximate lymphatic glands, and in a few "successive crops of pustules made their appearance on the affected limb, often developing themselves; also on the lower limb of the affected side, but seldom crossing the median line, and never developing themselves upon the trunk or head." He observed cases of the disorder after the use of vaccine matter, which in other cases produced perfectly healthy pustules, and expresses himself adversely to the supposition that the complaint may have been due to the use of virus contaminated with syphilitic matter, stating that none of the cases were followed by secondary or tertiary syphilitic symptoms. He arrives at the general conclusion that the disease as he saw it was not due to the quality of the virus employed, but to an impaired condition of the health of the soldiers vaccinated, resulting "from improper and spare diet, together with inattention to cleanliness."

In a general way, I may state that the opinions of Dr. Tripler have impressed me as representing the real facts of the case, and while not prepared to deny the possibility of the transmission of syphilis by vaccination, I have been unable to find in the papers filed in the office any clear evidence that such cases actually occurred during the War of the Rebellion.

I have the honor to be, very respectfully,

Your obedient servant,

J. J. WOODWARD,

Ass't Surg. and Bvt. Lt. Col. U. S. A.

SURGEON GENERAL'S OFFICE, *March* 24, 1870.

Respectfully forwarded to Dr. Wm. B. Davis, in compliance with his request of the 19th inst.

J. K. BARNES,

Surgeon General U. S. A.

C.

Letter from Wm. Clendenin, M.D., Health Officer of Cincinnati.

CINCINNATI, *May* 28, 1870.

Dr. W. B. DAVIS, *Cincinnati:*

DEAR SIR—The following brief summary of my own personal experience and observation relating to the subject of Vaccination, has been written at your request, and is, therefore, at your disposal.

It may be proper for me to state that my opportunities for observing the phenomena of vaccination, and its results, extend over a period of more than seventeen years practice, more than four years of which were in the United States Army during the late war, and a corresponding period of time as Health Officer of this city. While serving in these two official capacities I vaccinated about 8,000 persons, and during the same time superintended the vaccination of more than that number; including the cases vaccinated in private practice, I may safely fix the total number of vaccinations made and directed at not less than 16,000.

Such are the data upon which the following conclusions are based. And in order to give my conclusions as concisely as possible I have arranged them in the order presented:

1st. Vaccination, or the vaccine disease, is modified in its symptoms and local manifestations by certain epidemic or prevailing diseases.

(*a*) During the prevalence of small-pox the constitutional symptoms produced by vaccination are, in the majority of cases, more marked; the areola is larger, more painful, and the constitutional disturbance much greater, than at other times.

(*b*) The vaccine disease is very commonly modified by the prevalence of erysipelas and allied diseases, such as hospital gangrene; both the local and general phenomena of the former partaking largely of the character of the latter affections.

This fact was repeatedly observed during the war in the case of nurses and convalescents who were vaccinated in hospitals and convalescent camps in which erysipelas or gangrene existed. In many such cases the erysipelatous symptoms became alarming, while in others the separation of the scab was followed by the development, in the cicatrix, of very deep, large and painful ulcers, characterized by a tendency to spread and invade the surrounding tissues, and also sluggishness in healing. The frequent occurrence of such ulcers among soldiers, as the result of vaccination, gave rise to the opinion that the virus used had been taken from a person suffering from syphilis. But I have never been able to learn of a single instance in which secondary (syphilitic) symptoms have been manifested.

(*c*) Under certain conditions, as for example, where large numbers of persons are crowded together as soldiers are in barracks or camps, exposed to the vicissitudes of the weather, enduring great fatigue and restricted in diet, such a cachexia may be developed as will often give rise to alarming symptoms, both local and constitutional, in those subjected to vaccination.

The condition here referred to as a cachexia was familiar to most Army Surgeons; in some commands it was much more apparent than in others, and wherever it did exist vaccination often produced, or was followed by, unpleasant consequences, the most common of which was the development of the kind of ulcer described in the preceding paragraph.

All such cases had, for a long time, their explanation in the supposition that the virus used had been taken from a syphilitic person, but my own opinion is that the facts did not justify any such conclusion, as I have yet to hear of a single case in which secondary, or *any*, syphilitic symptoms were ever known to follow or result from such ulcers the result of vaccination as above described.

2d. I have no evidence that any disease of the skin, or that syphilis or other constitutional disease or diathesis, can be transmitted from one person to another, by using vaccine

lymph from the vesicle of a person afflicted with any such disease.

In the Males Syphilitic Hospital, (Military,) in Nashville, Tennessee, during the war, more than two hundred men were vaccinated while they were under treatment for the true infecting chancre. In every one of these cases the vaccine disease progressed, matured and desquamated without being in any perceptible manner modified by the existing chancre.

The scabs taken from several of these syphilitics, were used to vaccinate a number (about thirty,) of colored persons who had never before been vaccinated. The ages of these persons (vaccinated,) ranged from two to fifty years. Most of these persons remained under my own immediate observation, for nearly two years, and five of them were seen and examined six years subsequent to the vaccination, and in no case were any untoward symptoms manifested. The vaccination was not attended or followed by any ill effects in any of the persons vaccinated, and all escaped varioloid, and small-pox which was at the time prevailing as an epidemic in that place.

3d. Vaccination is always a certain preventive of small-pox, and generally also of varioloid.

4th. Vaccination once successfully performed in childhood may be trusted until about the fourteenth year; at that period the individual should be re-vaccinated, and a *second re-vaccination should be performed* as long as the perfect vaccine disease is produced. When the virus ceases to have any true effect *in an adult*, the individual is then absolutely safe.

5th. The protective power of vaccination has not diminished since its discovery.

6th. The protective influence of vaccination does not become impaired by the vaccine virus passing successively through any number of human beings if well marked *typical* cases only are used to vaccinate from.

7th. Small-pox and varioloid are the same disease.

8th. When vaccination fails to protect from small-pox, the reason is to be found either in the careless manner in which the operation has been performed, or in the neglect of re-vaccination at the proper time.

Very respectfully yours, &c.

W. CLENDENIN.

PNEUMONIA.

BY O. G. SELDON, M. D., SHANESVILLE, O.

REPORT ON PNEUMONIA.

BY O. G. SELDON, M. D., SHANESVILLE, O.

The inference might be drawn from the great latitude of the subject commended to me for elucidation, that I am expected to produce a formal treatise on the subject. I am, however, aware that the gentlemen for whom this paper is written have long passed that period when any elementary teaching was a necessity to them. Permit me also to say that an extended monograph on any medical subject is incompatible with the demands upon the time of a busy man, a condition of things which most of you will readily appreciate. I propose, therefore, to take but a cursory view of the subject, and in any extended observations or criticisms, to confine myself to points where my experience has led me to differ with the recognized authorities on the subject. Elementary information on this, as on almost every medical topic, will be best acquired by reference to some systematic treatise on the given subject, which may be found in the library of any accomplished physician.

One of the ablest of the modern teachers of our art, Sir William Ferguson, has remarked that generally our systematic works on medicine and surgery are written and compiled by those members of our profession who have had but a limited amount of experience, the men engaged in active professional duties not having time to spend in writing books. As a general remark, this is most probably true, and for this cause a treatise on surgery is apt to contain so much of what has not unaptly been termed, dissecting room surgery.

For instance, I have seen a learned and accomplished professor and surgeon, demonstrate the operation of tracheotomy on the dead subject, by making a clean and dexterous dissection of every tissue covering the trachea, at the point selected for operation, telling his pupils to cut this tissue and avoid that, to divide some parts and push others aside, and on no account to approach a certain plexus of vessels with the edge of the knife. This is all very well, but what idea does it convey to the inexperienced of the true nature of such an operation? When the real necessity of the operation is before us, and our patient is struggling with the impending suffocation, with every fibre of every muscle about the parts in incessant and rapid motion, what then becomes of your nice dissection of parts? Before this Society, I confess to the belief, that in this operation, I have divided every tissue between the integument and the trachea, once including the thyroid artery and thereby saved my patient.

What is true of our surgical writings is also true of the medical department of our literature, and we may with truth aver that our medical works contain too much of what may be termed "lecture room medicine." It has often seemed to me that too little heed is given to the facts of disease as developed at the bed-side. Are not teachers and authors too apt to incorrectly observe, or inadequately appreciate, or even willfully distort a given fact, that it may harmonize with, or support some preconceived pet theory? The great importance now justly given to clinical teaching in most of our medcal schools, is likely to overthrow many finely wrought theories, and spoil some fine declamation; but all this will be more than compensated by placing the light and shadows of professional life fairly before those who seek to enter upon it, and to render the student of medicine familiar with his duty, by bringing him face to face with disease in its manifold shapes at the bed-side.

Before entering upon the discussion of our subject, some remarks upon the anatomy and physiology of the lungs may not be inappropriate. In so doing, I shall briefly revert to

what I consider the received opinions of the profession on these points at the present time.

The ancient anatomists consider the lung as a fleshy mass, in which the air and blood commingled. The discovery of the pulmonary lobules is due to Malpighi, and the discovery was published to the world about the year 1660. The anatomical discoveries of Malpighi were subsequently confirmed by Bertholin, Willis and Helvetius; this latter anatomist demonstrating the independence of the lobules, which most previous observers believed communicated with each other. Willis distinctly says, the lobules of the lung are suspended on the final bronchial ramifications, as the fruit of a bunch of grapes on their peduncles. At the present day two antagonistic opinions are held concerning the minute anatomy of the lung, which discrepancies are said to be accounted for by the different modes in which this subject has been studied; one set of anatomists having studied the parts while the air vesicles were injected, and another having been accustomed to examine the lung structure when they were empty. The one party inform us that the compartments of the lobule communicate with each other, or rather with the common vestibular cavity of the lobule, while the other contend for the independence of each cellule or compartment, formed at the extremity of the respiratory canal.

As to the function of the lung, it seems to be now a received opinion that it is two-fold—respiration and secretion. More than two centuries ago, the anatomists of that time remarked the similarity in structure of the lung to a racemose gland. The suggestion does not seem to have attracted much attention until within the last fifty years, when, during the investigations of the French pathologists on the subject of pulmonary disease, the idea seems to have been revived. It is now generally held that the lung exercises the office of excretion as well as respiration, and the one function proceeds alternately with the other. The excreted products are gases and vapors. The fact that carbonic acid and watery vapors are given off during respiration, is no proof that they are not

excreted. The fact that volatile oils, ether, chloroform and alcohol are eliminated, proves that there is something more than a simple respiratory act. The mechanism of the secretion is precisely that of other glands, selecting certain substances carried by the blood, and permitting others to pass on. The special products excreted are azote, carbonic acid, watery vapor and organic matter. The amount of azote excreted is very small, that of carbonic acid and watery vapor has so far escaped estimation. It is, however, readily appreciated by the disagreeable odor of crowded halls and sleeping chambers, and may, in many cases, be the means of transmitting disease. Certain substances also accidentally present in the blood are eliminated by the lungs, showing that these organs exercise an elective action similar to that of other glands. As the liver seizes upon certain medicinal substances, as the salts of lead and phosphorus, the kidneys on nitrate of otassa and iodide of potassium, the salivary glands on the mercurials, so the lungs eliminate certain volatile substances, as ether, camphor, musk, chloroform and alcohol.

But whatever other function the lungs may be held to possess, we are not permitted to lose sight of the great and principal function of these organs, and the one which is of paramount importance to us practically in the treatment of their diseases and deviations from a normal standard of health, and that is that they are the great oxygenators of the whole animal economy. That most of the waste material, or the products of destructive metamorphosis of tissues, will not be taken up by the eliminating organs of the animal economy, until they are oxygenized, and consequently without a due supply of oxygen, this very important operation, an operation that is so very essential to life, cannot but be temporarily interrupted. Apropos of this process of oxygenation of waste material, I would not be thought as still clinging to the now *effete* idea of a combustion in the lungs, as the source of animal heat. Heat is most undoubtedly the result or product of molecular motion. Those who have been interested in tracing the ingenious experiments of Dr. Bence

Jones to determine the source of heat, must have been strongly impressed with the truth of the proposition. How much molecular motion may be caused by the oxydation of these products of destructive metamorphosis, and how far this process may be the source of animal heat, is not the design of this paper to determine. To the mind of the writer the proposition commends itself as in the main correct. The practical application of these principles will be considered hereafter.

The term pneumonia, or pneumonitis, or pulmonitis, the former of Greek, and the latter of Latin derivation, is given to an inflammation of the parenchymatous structure of the lungs, the nature and treatment of which cannot be too carefully considered, as it is, in the experience of the writer, by far the most common of all the dangerous inflammations, in our northern temperate climate. In most localities it is emphatically the *disease* of the winter and spring months of the year.

The ancients applied the term pneumonia to the acute diseases of the chest, which were not attended with severe pain, and where this latter symptom was present, all acute chest affections were termed pleurisies. Much indefiniteness followed such an attempt at diagnosis, and inflammation of the lung was often described under the name of pleurisy. The earlier cultivators of morbid anatomy were the first to prove the distinct existence of the two diseases, but they discovered no means of distinguishing them during life. Cullen, the great nosologist of his time, attempted to distinguish acute pulmonary diseases by the rationale of their symptoms. He made pleurisy a species of the genus pneumonia, but says the term pleurisy might be applied to every case of this disease. His definition of the genus pneumonia is as follows: Fever, pain in some part of the chest, and cough. But these symptoms are in the majority of instances present in both pleurisy and pneumonia, and there are cases in both diseases in which all of the symptoms are absent, at some period during the course of the disease. Then the specific definition which he gives of pneumonia, as the softer pulse, duller pain, and constant

dyspnœa, with livid countenance, are as much characteristic of severe bronchitis as of pneumonia, while the hard pulse, acute pain, increased on inspiration, painful decubitus on the affected side, painful cough, at first dry and afterwards with expectoration, and often bloody, assigned as the symptoms of pleurisy, belong equally to pleuro-pneumonia, and are sometimes presented by capillary bronchitis connected with pleurodynia. But it is only by the aid of auscultation and percussion that the really distinctive characteristic features of pneumonia can be with certainty ascertained, and it is, therefore, only in the writings of those who have employed this method of diagnosis, that we find a really intelligent description of pneumonia.

Dr. C. J. B. Williams has given us the following description of the disease: Fever, with more or less pain in some part of the chest, accelerated and sometimes oppressed breathing, cough, with viscid and rust colored expectoration, at first the crepitant ronchus, afterward bronchial respiration, with broncophony, and dullness of sound on percussion in some part of the thorax, but in this, as in most other diseases, pathology is the only sure basis of definition. Pathologically, therefore, pneumonia is an inflammation of the parenchymatous structure of the lungs, which inflammation may be and often is extended to the investing pleura of the lungs, and sometimes to the plural lining of the thorax. This inflammation, although usually attended by an array of marked general symptoms, is not so essentially with them, as to receive from them an infallibly pathonomonic character.

We are indebted mainly to the French pathologists Laennec, Andral, Grisolle and others, for the means of determining the pathological condition of the lungs during life, and for making accurately the ante mortem diagnosis of the different morbid affections of the chest. It is true that in the detail of their conclusions they committed many errors, which subsequent investigators have discovered and corrected, but the general principles deduced from the facts observed by them,

have stood the test of criticism, and are to-day among the great accepted truths of modern medical science.

Like most serious inflammations of the internal organs, pneumonia is attended with fever, which is ushered in by a chill of greater or less duration and severity. This chill, when the disease attacks one who is otherwise in his usual health, is apt to precede the local symptoms, which are usually developed with the fever which succeeds the chill. Frequently, the chill is attended or even preceded by a feeling of great languor and depression, with pain in the back and limbs, a disordered stomach and bowels, and in some seasons bilious vomiting is an almost constant attendant on the onset of the attack, which vomiting in many cases amounts to hyperemesis, and demands prompt treatment. The rigor is in many cases absent or not noticed by the patient, principally when the pneumonia is developed from a bronchitis, or occurs as an intercurrent disease, during typhus or typhoid fever. It has been observed that, with the exception of intermittent fever and septicæmia, the rigor in pneumonia is apt to be more marked and protracted, than in any other disease. Niemeyer thinks that a diagnostic point may be made, from the fact that in the two former diseases the chill is repeated at intervals, more or less regular, whereas in the latter it rarely occurs more than once. In children, the pneumonic attack is often ushered in by a convulsion, while the chill is either absent or not marked. The fever following the rigor is generally very intense, and in robust and plethoric individuals, is attended by great flushing of the face, injection of the conjunctiva, headache, and many other signs of the local determination of the blood. The general fever may precede by a day or two the special symptoms, often diminishing in intensity when they appear, and sometimes continuing in intensity and masking them. The pain in the chest is, when present, an early symptom, and sometimes precedes by several days the cough and expectoration. This pain varies greatly in degree, being often very intense, and is described by the patient as lancinating or stabbing;

sometimes it is diffused and dull, and sometimes it is a deep seated feeling of weight and heat, rather than of pain. Most commonly it is deep seated in the anterior parts of the chest, below the sternum, or mamma, sometimes under the scapula; acute pain is more common in either of the sides. Sometimes the seat of the pain is referred by the patient to a location remote from the part really affected, and it is common for children to refer the pain to the stomach, abdomen, and even to the lumbar region. It is well to bear these facts in mind. Flint observes that, as a rule, the intensity of the pain is in proportion to the amount of co-existing pleuritis. This does not agree with my observations, as I have seen many cases in which the pain was a prominent and marked feature of the disease, and they were certainly not complicated with pleuritic inflammation. To my mind the pain is produced by the pressure of the thoracic parieties on the swollen and inflamed lung, and the point to which the pain is most usually referred by the patient, is where the costal and pulmonary pleura are most forcibly brought in contact. My own explanation is not, however, universally correct, as I have known patients (rarely it is true) to refer the pain to the side opposite the one affected. As to the locality of the inflammation in pneumonia, the following is an abstract of notes taken of eighty-eight cases in the winter and spring of 1869. Of these twenty-six were of the right lung, forty six were of the left, sixteen were bi-lateral; of these eight were broncho-pneumonia.

Hurried respiration is one of the soonest developed and most constant symptoms in pneumonia. It soon follows the stage of invasion, or occurs simultaneously with it, but it may exist for many days if the pneumonia be not very severe, and remain unnoticed by the patient, his friends, or even his physician. Assuming an average of fifteen to twenty respirations to the minute for the healthy adult, in pneumonia they are increased to from thirty to fifty, and as some have observed to sixty, and even seventy. During the last winter I was called to see the patient of a physician, who informed me that

he did not think his patient's respiration was much accelerated, if at all. In this case I counted thirty-two per minute; and in another case, where a similar report was made, I counted forty-four. Sometimes it amounts to absolute dyspnœa, and is dependent on several causes: 1st. To the slowness and imperfection with which the blood is renovated in the inflamed organ. 2d. To the diminution of breathing surface by the clogging of the air vesicles, and exclusion of the air. 3d. To collateral œdema in the uninflamed portion of the lung. 4th. To the pain which a deep breath causes the patient; but above all else is the increased demand for air, or rather oxygen of the air, since in the augmented combustion and accelerated destructive metamorphosis, which goes on during fever, more oxygen is consumed, and more carbonic acid is given out in the organism. It is stated by Niemeyer that when fever subsides, the dyspnœa ceases almost completely, but this I have not observed until the obstacles to respiration were removed, which he, Niemeyer, does not regard as having much control over this symptom. I have very constantly observed some acceleration of respiration to continue until the deposit was removed from the lung, and in some cases for some time afterward. The act of respiration is short, quick, and guarded, and apparently confined to the upper portion of the lungs. The movement of the thoracic wall is much freer on the unaffected side, as we shall show when we come to speak of the physical exploration of the chest.

Cough is also a constant symptom of pneumonia, at some period of the disease. Authors mention cases where it was altogether wanting, but no such case has fallen under my observation. When the inflammation is seated at the extreme lower lobe of the lung, I have known many cases where the cough did not appear until the third or fourth day, but it came at last, and with it its characteristic expectoration. Cough is a source of great discomfort to the patient, aggravating the pain and fever, and in some cases so constantly annoying as to interfere materially with rest and sleep. Children are observed to suppress the inclination to cough as

long as possible, and only to yield to the desire when their power of resistance fails. The cough is short, smothered, and made without effort; at first it is dry, and subsequently attended by profuse expectoration. The expectoration is a symptom of importance, and should be closely observed. At first it is viscid and tough, so much so that in feeble persons and in children, they are unable to cast it from the mouth, and it must be removed by a napkin. Children rarely make the effort to throw it out, but as soon as it reaches the fauces it is at once swallowed, and passes into the stomach. It is now streaked with blood, and plentifully mixed with air bubbles. Some cases occur in which the sputum is nearly entire blood, mixed of course with the peculiar tenacious mucus and bubbles of air. These cases are somewhat alarming to the inexperienced, but recovery takes place as promptly as in other cases. Later in the disease, when the lung has become hepatized, the sputum becomes rust-colored from a more intimate mixture of blood with the mucus, and it loses somewhat of its viscidity and becomes more diffluent. If the patient be old and feeble with marked failure of the vital powers, the sputum is apt to assume what is called a prune-juice character. Until resolution is more or less complete, the sputum maintains its rust-colored appearance, but when this process is going on, if a portion of the sputa be examined by the microscope, with a low power, small and apparently structureless lumps appear, which, upon being disentangled and spread out, will be recognized as repeatedly bifurcated and ramifying coagula. These are the fibrinous casts of the minuter bronchi.

The fever attending pneumonia, as I have observed, it is never a continued fever, but always remittent in its character. The evening exacerbations and morning remissions are marked, and cannot escape observation. During the exacerbation it is not uncommon to find the temperature 104 degrees, and it sometimes is said to rise above 107 degrees. I have observed that the temperature is increased whenever the inflammatory action extends itself, and attacks a hitherto

unaffected part of the lungs. In most cases, a day or two before the occurrence of the crisis, the remission is more marked and of longer duration. On the other hand, immediately before the final subsidence of the fever, the temperature sometimes reaches a higher grade than it had previously attained. During the second or stage of hepatization, upon the coming on of the evening exacerbation of the fever, a red or purple spot may appear upon one or both cheeks, abruptly circumscribed and bounded, and which was formerly thought to appear on the cheek corresponding to the affected lung. Niemeyer says it often occurs at the side upon which pneumonia exists. I have not so observed it, and have repeatedly seen this spot shift from one cheek to the other in a few minutes space. I have no explanation to offer, but it is undoubtedly some form of capillary congestion, how caused I cannot tell. The herpetic eruption which occurs about the mouth, is usually present early in the disease.

According to my observation the pulse in a pneumonia of average severity, will range from eighty to one hundred beats per minute, though in very severe cases it may reach one hundred and thirty, or even one hundred and fifty. At the onset of the disease, it is full and bounding, but as the disease progresses it becomes small and soft. The feebleness of the pulse is not always an indication of the failure of the vital power. In some cases this is due to depression of the heart's action, caused by the high temperature, so that its weakened impulse scarcely has the power to overcome the resistance offered by the aorta to the outflow of the blood. Under these circumstances but little blood is expelled from the heart, causing a feeble pulse-move and a small pulse. In the majority of cases, however, it is not the weakness of the cardiac actions, but lack of blood in the left ventricle, which causes a deficit in the supply of the aortic system, and renders the pulse small and soft. The left ventricle is imperfectly filled, because afflux of blood to it is obstructed. In an extensive pneumonia an obstacle to the circulation exists, which cannot be fully compensated by acceleration of the capillary c

tion in the uninflamed portion of the lung. The consequence is that too little blood enters the left ventricle, while the right ventricle and the aortic system are overloaded.

Delirium is a frequent sympton in pneumonia, and a very unpleasant symptom it is. It is not caused by determination of blood to the brain, or by a hyperæmia of that organ, but by the presence of waste material in the blood, which fails to be removed by the proper depurating organs, in consequence of a deficient supply of oxygen by the lungs. Delirium is more common in some seasons than in others, and sometimes occurs in almost all modifications of the disease, although more commonly it is associated with inflammation of the upper portion of the lung, or with bilateral pneumonia or with broncho-pneumonia. It is usually low and muttering, the mind seeming to be tormented by some prominent idea or object, but I have seen it violent and raving, requiring strong restraint to keep the patient in bed. The delirium is most marked during the evening exacerbations of the fever, and commonly subsides into a more or less disturbed sleep during the morning remission, to be again renewed in the coming afternoon and evening.

Slight jaundice is a frequent accompaniment of pneumonia. It is rather a sallow, dingy and icteroid hue of the skin, than real jaundice. Commonly I have not been led to regard it as due to venous congestion of the liver, as suggested by some authors, but as the consequence of the presence of *effete* matters in the blood. Where real *icterus* attends or follows an attack of pneumonia, I have thought it depends mostly upon catarrh of the duodenum and biliary ducts. These cases are rare and usually attended by some enlargement of the liver.

Even without any marked gastric disturbance, the appetite in pneumonia fails often so entirely as to amount to absolute anorexia. The tongue is at first covered by a thin white fur, which as the disease goes on becomes thicker and assumes a more yellow cast. The mouth and fauces are usually dry and the thirst considerable. Niemeyer declares his inability to

account for the loss of appetite in fever. Where there is such an augmentation of destructive metamorphosis as always occurs in fever, there would seem *a priori* to be a demand for a necessary supply, and therefore an increase of appetite. But it has seemed to me that as the result of the complete derangement of the whole function of nutrition, the economy is not conscious of the drain upon it. So there is no craving for a supply of nutritive material as in health, when every function of the nutritive process is in full play. The bowels at the outset of the attack in pneumonia, are usually constipated and the dejections dry and scanty.

The foregoing are the main objective symptoms of pneumonia, as I have observed them during my professional life. Usually they are more or less prominent and intense, as the disease assumes a greater or less severity. Then some persons seem to bear an attack much better than others, so that a pneumonia involving a much greater extent of lung than another, will be borne much better, and recovered from more promptly. I have seen no case of real pneumonia, terminate in resolution during the stage of engorgement, but have found it without exception to pass into the stage of hepatization, before recovery took place. The duration of the disease, I have observed to be about ten days as a mean.

This disease attacks all ages and conditions of life, from the infant of a few weeks old, to those in extremely advanced life. In my experience, children and young infants are as liable to an attack as adults. It prevails mostly during the winter and spring months of the year, and it is rare to meet a case of the disease from the commencement of the warm weather of summer, until the changeable seasons of autumn and winter set in. It has seemed to me that its prevalence depends on something more than atmospheric vicisitudes, or the changes from cold to comparative warmth, or the rain or snow falls. Some years since during the extreme prevalence of the disease, I commenced a series of observations on the electrical condition of the atmosphere, in con-

nection with observations on other atmospheric conditions, but was compelled by my duty to the sick to abandon them. A series of careful and well conducted observations on this point, might throw some light on this part of our subject.

I have not observed any pre-disposing cause for pneumonia, except that the patient has suffered from it previously. It is common when treating adults to learn that they have had the disease before, and I have myself treated a patient in his twelfth attack. Instances are recorded where the disease has recurred in the same individual more than twenty-five times. I do not think that feeble or consumptive persons are more liable to pneumonia than others, on the contrary it has been my experience to encounter the disease in those of otherwise robust and vigorous constitution. Bear in mind that my observations have been made in a healthy locality, and in a country practice.

The complications of pneumonia with other affections, will of course, involve the addition of other symptoms, peculiar to the individual disease with which it is associated. Being developed in the course of periodic fever, the pneumonia may serve to interrupt the regular succession of the paroxysms, the intermittent may also mask the pneumonia and serve to obscure the pulmonary trouble. Occurring in the intemperate, pneumonia is apt to be attended with delirium tremens. The peculiarity of the delirium, will serve to distinguish it from the ordinary delirium of the pulmonary affection. These are grave cases, and demand important modifications in treatment, that will be more fully considered hereafter. The urine undergoes important modifications in pneumonia, which always aid the diagnosis, and are in many respects pathognomonic of the disease. It is scanty, of high specific gravity, often albuminous and deficient in the chlorides, which at some period of the disease nearly or quite disappear. Urea is present in larger quantities than in health. It has been observed to increase to three times the usual amount secreted in health. This is thought to be due to the destructive assimilation of the nitrogenous constituents of the

body, and we are taught to believe that the portion of the alkaline chlorides, produced by tissue metamorphosis, is excreted from the blood with the pneumonic exudation, in which they are present in large quantities.

In proceeding to the physical exploration of the chest, some remarks upon the manner of conducting it may not be out of place. The chest should, as far as consistent with the sex and condition of the patient, be denuded of clothing so as to present to the observer a view of the outline of its contour. This gives but negative results, except as to the respiratory movements of the chest, which during the stage of engorgement are disproportionately performed by the healthy side, often so much so that we are at once able to locate the affection, by the mere inspection of the chest. Upon palpation during the period above referred to, and sometimes during hepatization, the pectoral fremitus is unusually distinct and strong. This will be most marked upon the right side, from the peculiar conformation of the right bronchus, and its binary ramifications. Percussion of the chest comes next in order. It is not probable that the physician will often have with him a hammer and pleximeter, or even a stethoscope, and it is consequently best for him to train himself to the dextrous use of the apparatus, with which nature has endowed him. Any man who has one good ear, and two good hands, can educate himself to make an accurate diagnosis in acute diseases of the chest. In making percussion the left hand should be laid upon the chest, its palmar surface next the skin, the fingers spread out like a fan, and each making as nearly as possible equal pressure upon the thoracic wall. The fingers of the right hand are drawn together, the ends in a line, and form a hammer with which the percussion is made. With the ends of the right hand fingers so drawn together, the dorsal aspect of the left hand fingers is lightly struck, going from one to another, and taking care to give the blows about equal force. This is repeated again and again until the operator is satisfied. I regard the above as a better method than using a single finger of the left hand as a

pleximeter, and moving it from place to place. A slight deviation in the tone of the percussion note is more readily detected by the method I have indicated.

During the stage of engorgement percussion often yields a purely tympanitic, hollow sound. The ring of a healthy percussion note is resonant but not tympanitic. The imperfectly filled air vesicles are said to give rise to this hollow sound. More commonly, however, even during the forming stage of pneumonia, the healthy resonance of the percussion note is diminished, and this diminution goes on during the process of infiltration, until when the lung has become solidified, percussion yields no resonance but only a flat, dead sound. The progress and extension of the disease is by this means correctly ascertained. As the disease declines the percussion resonance returns to the lung, but weeks and months may elapse before we fail to distinguish the healthy from the diseased lung by this means.

Auscultation is perhaps best performed with the naked ear applied over and in direct contact with the chest, in the suspected diseased locality. If the stage of engorgement be present, the crepitant ronchus or rale will be distinctly heard. It may be recognized by its fineness and by being heard only during inspiration. It has been likened to the crackling of dry salt when thrown upon the fire, and to the sound given off by rubbing a lock of hair between the fingers in close proximity to the ear. Neither gives a real example of the sound, but the latter is by far the best illustration. The crepitant must be distinguished from the sub-crepitant rale, which is usually coarser although it may not possess that character, but it is a moist bubbling sound, and is heard in both movements of the respiratory act. It is more difficult to distinguish the crepitant rale from the puerile respiration of children; careful attention and some experience will be required to make one sure in his diagnosis. The fact that the crepitant rale is heard only in the diseased portion of the lung, and puerile respiration may be heard over the whole chest, is the only distinguishing trait between the two, as far as I am

informed. The crepitant rale marks the healthy vesicular murmur, although that sound may frequently be heard mixed up with it. As the process of exudation proceeds, the crepitant rale subsides until it is no longer heard, and is replaced by what Flint has described as the broncho-vesicular murmur. The lung, or the affected portion of it, is now tolerably solidified, and the percussion note is very dull. This sound is followed by bronchophony, bronchial respiration, and whispering bronchophony, which are regarded as different signs of the same pathological condition. Although these three last signs or sounds are generally all present in any given case, yet the observer may fail to recognize some of them. The lung is now solid and the percussion note flat The crepitant rale may sometimes be heard around the outer border of the solidified portion of lung, but is usually marked by dry and moist bronchial rales. The commencement of resolution, and its progress from day to day and sometimes from hour to hour, (for the progress of resolution is frequently very rapid) may be noted by the signs developed by the physical exploration of the chest. The bronchophony yields to the broncho-vesicular murmur, that to the crepitant rale, and that to the healthy vesicular murmur, while the dullness or flatness of the percussion note disappears, and resonance on percussion returns, though, as before observed, the dullness on percussion sometimes continues long after auscultation shows that the infiltration into the lung has been removed. It is during resolution that the sub-crepitant rale is most frequently heard. If the disease pass into suppuration, the dullness or flatness on percussion continues, and the moist bronchial rales, due to pus in the air tubes, are prominent. On auscultation the signs of solidification continue, but are less marked. If abscess of the lung is formed, and the patient live over the discharge of pus, it is said that cavernous respiration may become well marked. In this I do not speak from experience, having never seen a patient survive the discharge of pus in abscess following pneumonia.

The foregoing are the signs that I have observed in physi-

cal exploration of the chest in pneumonia, and I have very constantly found most or all of them present at some period of the disease. Flint says that the crepitant rale may be absent in the stage of engorgement, but no such case has occurred to me. I can conceive such a condition, when the engorgement is circumscribed, and not enough lobules become implicated in the inflammatory process, to develop the phenomenon. But while, as at present, we regard the crepitant rale as pathognomonic of pneumonia, by what means shall we determine in its absence that such a condition of the lung exists? He says we must wait the development of the crepitant rale, and here we shall heartily coincide with him. In any case of any disease, which does not furnish sufficient objective or subjective symptoms, to warrant an accurate diagnosis, it is certainly wisdom to await its further development. But however great the value of physical exploration of the chest, as a means of diagnosis in pneumonia, it is not of itself sufficient to prove more than the existence of infiltration and filling of the air vesicles. The character of the infiltration must be inferred from the clinical history of the case.

The prognosis in pneumonia must generally be made out from the extent of the disease, and the amount of constitutional disturbance attending the local affection. An intense fever, and elevation of the temperature to over 104 or 105 degrees Fahrenheit, with a pulse of one hundred and ten or over, render the result very doubtful. Double pneumonia, and broncho-pneumonia, together with complications with tuberculosis, disease of the heart, or Bright's disease, will cause us to fear an unfavorable result. So also the occurrence of the disease in very aged persons or drunkards, is very likely to result unfavorably, as such persons illy bear any disturbing influence, that tends rapidly to exhaust the vital powers. Niemeyer says the mortality among the aged is as high as sixty or seventy per cent. Judging from my own experience, this is an exaggerated rate, though it cannot be denied that above the age of seventy, the occurrence of pneumonia is attended with great hazard to the patient. The

occurrence of the prune-juice sputa, indicative of a poor state of nutrition and fragility of the pulmonary capillaries, denotes a cachectic condition of the individual, and consequent uncertain issue. Late in the disease, absence of expectoration, with gurgling sounds in the chest, signifying paralysis of the bronchi with œdema of the lung, indicate approaching dissolution. Heavy drowsiness, transient twitchings and palsy, are ominous of evil.

Pneumonia affords one of the most complete examples of the three essential pathological conditions of inflammation, namely: central stasis, concentric hyperemia and exudation. The exudation does not tend to the formation of new tissue, as in pleuritis; it is not exfoliated and expectorated as is the case in exudation of lymph on other mucus surfaces, but is removed principally by absorption, and that sometimes with great rapidity. The material of the exudation undoubtedly comes from the blood circulating in the capillaries of the pulmonary artery. The exudation is thrown out upon a free surface, and when removed by absorption, the tissues of the minute structure of the lung are left intact and uninjured.

The cause of death in pneumonia is, in the great majority of cases, exhaustion of the vital powers. Cases do occur where death takes place early in the disease, and during the stage of engorgement, and from the extensive and complete congestion of the pulmonary tissues found at the autopsy of such cases, they were formerly termed pulmonary apoplexy or apoplexy of the lungs. In these cases the patient, after a short period of difficult and labored breathing, sinks into a drowsy condition and dies comatose. Considerable congestion of the brain is generally superadded to that of the lungs. Abcess of the lung is rare, as I have met with but one case in all my experience. This patient recovered from the immediate effects of his pneumonia, and gained some degree of strength, so as to be able to ride out in a carriage. It was observed during this time that the pneumonic infiltration had not been removed, but the patient regained his appetite, and the cough and expectoration were mitigated, though he

had occasional slight chills, followed by short paroxysms of fever. In about two months all the unfavorable symptoms became suddenly aggravated, with copious purulent expectoration, and the patient sank and died in three days from the date of his apparent relapse. Gangrene of the lung must still be a rarer result of Pneumonia, as no case has occurred in my practice, and I never saw but one, and that was while I was a student at the Massachusetts General Hospital. This patient was affected with tuberculosis, and the pneumonia resulted in gangrene and death. A cause of death which has occurred under my observation, rarely it is true, but still sufficiently often to leave on my mind a distinct and vivid impression, as it is apt to occur, when it does occur, during the stage of resolution, and when that process is most active, is the formation of heart-clot. The blood becomes so loaded with the absorbed infiltration of the affected portion of the lung that its fluidity is lost and it coagulates in the ventricles of the heart. Death in this manner is sudden, and very likely to be totally unexpected. The mode of management which has at least a reasonable probability of preventing such an occurrence will be discussed when we come to speak of the treatment of pneumonia.

I have also the recollection of some cases, where tuberculosis of the lungs followed directly after an attack of pneumonia, and seemed to me to result as a sequel to that disease. Probably these were cases of the caseous infiltration, described by Niemeyer, but at the time when these cases were observed, I was not informed of this pathological termination of the disease, and cannot speak with assurance on this point.

The treatment of pneumonia has passed through many changes, the most opposite views having been advanced as to its pathology, and consequently the most diverse therapeutic appliances have been brought to bear in the management of the disease. During the reign of heroic medicine, it was almost impossible to correctly estimate its natural history, for but few cases escaped so much officious meddling from physicians, that but little idea could be correctly formed

of their natural course and termination. When we reflect how short a time has passed since any physician would have been held almost criminally responsible by the medical public, who would have presumed to treat any case of internal inflammation, much less a pneumonia, without the free use of the lancet, we cannot wonder at the great and radical change that has taken place in the minds of our profession on this subject. It is now a pertinent inquiry and one of interest to us all, if we are not likely to drift to the opposite extreme, and that the therapeutics of inflammation shall degenerate into absolute nihilism. I well remember when it was considered good practice in pneumonia, after venesection to syncope, to administer from one to two grains of Tart. Ant. every two hours, and in a gastric remittent of our malarious districts, to give from thirty to fifty grains of Calomel at a single dose, and I have heard a reputable practitioner of my own neighborhood boast of having extended the dose of the mercurial to one hundred grains. I am thankful that I have, somehow, been preserved from such folly, and that such an act is not among the sins or errors of which I must render an account. But while repudiating the extravagancies of the heroic period of medicine, let us beware of passing to the opposite extreme. Most undoubtedly there is a curative power in medicine. This proposition needs no amplification before those here assembled. What we should ever bear in mind is never to interfere with the natural cause of any disease, unless we have a clear and well defined object in view, and this object should harmonize with the well understood pathology of the individual case. Unless we can medicate in strict accordance with this rule it is better not to medicate at all. Further, we should bear in mind that in most acute diseases, there is a tendency to a cyclical course; in other words, they tend naturally to recovery, after a given time. But in this class of diseases we can be of great service to the patient, and by judicious therapeutic appliances, often hasten the period of recovery, or protect the organ affected, or even the whole economy, against lasting injury from the effects of the malady. It

seems to me that Dr. Watson in his Practice of Physic, has sung the key note to the treatment of all diseases, when he says that we should endeavor "*to obviate the tendency to death.*" Particularly in pneumonia is this the treatment, first and last, and I might here dismiss this part of the subject, with the reflection that I have done it ample justice, were it not probable that I might be questioned as to my apprehension of the rule laid down. We have before observed that in the vast majority of cases of pneumonia, the tendency to death is by exhaustion of the vital forces, consequently the treatment must be such as will obviate this tendency and prevent its final consummation. This comprehends many items and various therapeutic means, to the consideration of which we will now give our attention.

And first of the great Samson of the therapeutics of inflammation—the lancet. That there are cases of pneumonia, where venesection not only does good, but is indispensible to successful treatment, there can be no doubt. When the patient is plethoric and previously well nourished, and the attack is severe with high fever, strong pulse, flushed countenance, and hurried respiration from the first, with extensive concentric hyperæmia of the inflamed lung, bloodletting is no doubt our first and imperative duty. Not because bleeding will cure the pneumonia, or even perhaps cut short the attack, but because we shall lessen the volume of blood in circulation, and drain what is left of its superabundance of fibrin, and perhaps in so doing diminish the probable amount of ensuing infiltration of the lung, and render the individual case more amenable to other treatment, which is less exhausting to the powers of life. Even in extensive and profound congestion of the lungs, where the pulse is comparatively feeble, extremities cool, countenance livid, and respiration very labored, I have seen prompt relief from bloodletting in conjunction with sinapisms to the extremeties, warmth to the surface, and even alcoholic stimulants internally. The amount of blood taken, need not be large, from ten to sixteen ounces will almost always be sufficient. Secondary bleedings are

rarely if ever demanded, if the first is followed up by proper therapeutic management. I would also take blood while the patient is in a recumbent posture, the object being to endeavor to restore the lost balance of the circulation, and not to disturb it by producing syncope. Bleeding by cups is in many cases of great apparent benefit. Cuppings acts not only as a depletory measure but also as a counter irritant. Where it seems best to take blood, and still husband the vital energies of the patient, I would much prefer the cupping to venesection.

In commencing the treatment of a pneumonia, especially if called during the stage of engorgement, it will almost always be best to give a brisk cathartic. This unloads the usually constipated bowels, reduces the fever, and often relieves the patient of much discomfort. I usually give a combination of Calomel and Rhubarb, about five or six grains of each, followed in about two hours by a saline aperient. Notwithstanding the opinions lately published, as the results of the investigations of Rutherford and others, I cannot yet part with my belief, that Calomel exerts a specific action in hepatic and portal congestion. I have too often seen this pathological condition relieved by that drug, to be at once convinced that my whole professional life has been passed in erroneous observation. When the stage of engorgement is passed, it may be a question whether any but the mildest purgation can be attended with benefit, still throughout the entire course of the disease, the bowels should not be permitted to become constipated. Generally a judicious management of the medication, will keep the bowels soluble, and where this fails, an occasional dose of Ol. ricini, or of a saline aperient in the form of Seidlitz powder, will fill every indication in this respect. After the purgation, if the stage of engorgement still continues, and the febrile action is still high, nauseants and arterial sedatives are indicated, also opiates to relieve pain and nervous restlessness. A combination of Tart. Antim. one-fourth grain, Ipecac one-half grain, and Dover's powder, three grains, given every two or three hours,

will admirably answer the indication present in this stage of the disease. If the pulse exceed ninety, it will be best to administer an arterial sedative. Our choice may lie between Digitalis, Veratrum, Aconite, and Gelseminum, any of which will answer the purpose indicated. Having always succeeded with the Veratrum, and being satisfied with its effects, I can recommend it as at any time reliable for reducing the action of the heart. I know but little from personal experience of the other sedatives mentioned, having used them but seldom, but I have tested their efficiency often enough to know they can be relied on. I have usually used the Veratrum in the form of Norwood's Tincture, being best acquainted with its use in that form, and having always been satisfied with it, I have not sought other preparations. In the first stage of pneumonia, unless the pulmonary circulation be greatly interferred with, we may push the Veratrum until we reduce the pulse to fifty or sixty, and so maintain it for many hours. I think I have seen no good result from such a practice, and cannot recommend it. From four to eight drops of Norwood's Tinct. may be given as an addenda to the nauseant before mentioned, and its dose increased or diminished and continued or stopped, according to its effect on the pulse, and the other features of the case.

Topical applications are indicated, and are of use in this stage of the disease. According to my experience the best are sinapisms in the form of the mush and mustard poultice. The amount of mustard should be such as will effectually redden the skin in about an hour's time. The sinapism is then removed, and followed by a thorough inunction of melted lard over the whole chest, and a flannel roller or jacket applied next the skin. The sinapisms and the inunction may be repeated again and again during the whole course of the disease. I have had no experience, and probably never shall with the cold applications used by Niemeyer, and some years since I laid aside the use of blisters. My objections to the use of blisters are: 1st. I do not think they are more efficacious than sinapisms, and are a source of much

more discomfort to the patient. 2d. They are much less controlable more especially in children, whom they often render irritable and unmanageable. 3d. They interfere so much with the thorough and necessary physical exploration of the affected lung, a knowledge of the condition of which is so essential to the intelligent treatment of any case of pneumonia.

The foregoing are the most reliable therapeutic means we have in managing the stage of engorgement, in a pneumonia of average severity, and without complications. We shall, however, in some cases, especially in the aged and feeble, and sometimes in drunkards, find it necessary to commence at once with sustaining and restorative treatment. Such cases I have often seen recover, which I believe would have perished under any other treatment. By the treatment here given for the first stage of pneumonia, we may reasonably hope not to cure the disease, but to prevent the extension of the inflammation, to lessen the amount of concentric hyperæmia, and consequently subsequent œdema of the lung, and as much as possible preserve the vital force of our patient for the struggle which is to come.

The stage of engorgement has now past, and the exudation of the products of inflammation of the lung into its air vesicles is here; in other words, the lung has become hepatized or solidified. The inflammation as such has relieved itself by exudation, and is no longer a subject of solicitude to the physician. But another condition has arisen, which claims his attention. A greater or less portion of the lung, according to the extent of the inflammation, has been deprived of the power of exercising its normal function; in other words, the breathing part of the lung is so much less than in health. Consequently a much less amount of oxygen is received into the system, and a less amount of carbonic acid is evolved. As the result of this condition of things, the elimination of waste material is but slowly carried on, and the function of nutrition is more and more disturbed. Evidences of consti-

tutional debility now present themselves, in the nervous, jerking and often quickened pulse, harsh and dry skin, of a sallow hue, and often imparting to the touch that peculiar sensation called *calor mordax*, increased dryness of the tongue, its tip and edges red, with some tendency to diarrhœa, often low and muttering delirium, and that category of symptoms termed "typhoid," are more or less all present. The fault here is in the diminished capacity of the respiratory apparatus, and as a consequence deficient oxygenation of the blood, and impending exhaustion from the extreme disturbance of the function of nutrition. Following our axiom for the treatment of disease, "to obviate the tendency to death," two indications are here to be met. First, to endeavor to supply the deficient oxygenation of the blood; and, second, to support the vital powers until the absorption of the exudation into the air vesicles of the lung takes place. The first indication has, in my experience, been best fulfilled by giving the Chlorate of Potassa in free doses. I usually for an adult give ten grains of the Chlorate, with three or four of Dover's powder every two or three hours, the anodyne being necessary to procure rest and relieve the nervous erethysm, which almost always attends this stage of the disease. But when may we look for the removal of the exudations? Not in any given number of days or hours, but when, either by treatment or the recuperative energies of the animal economy, the system regains such a condition that the processes of waste and repair are somewhat nearly balanced, the functions of nutrition and elimination bearing a proper ratio to each other. The process of absorption will hardly be commenced, when the vital forces are so much below the normal standard, as they are generally found to be at this stage of pneumonia. We must here be ready with our restorative treatment, whenever we are satisfied that the rallying force of the system is incompetent to the task. And we must not delay too long. I have not often had to regret that I commenced sustaining treatment too soon. This treatment will, of course, consist of tonics, stimulants, and nutritive food, such as the patient

can be induced to take. Generally at this period of the disease, the anorexia, which marked the onset, has passed away, and the patient, if not fed beyond the capacity of his weakened digestion, will not object to taking a sufficient amount of nutritious ailment. The more concentrated the food is, the better, for then if the patient have no appetite, we shall probably still be able to induce him to take it. Beef tea, strong chicken broth, stewed oysters, with toast, crackers, pearled barley, rice, tapioca, sago, fruit, and animal jellies will, I think, be found to best answer the indication now present. For a tonic, quinia has in my hands done best service. From one to three grains given every three or four hours is the ordinary adult dose. For a stimulant a whisky punch has done best for me. I usually combine good rye whisky, water, and cream, in equal proportions, and sweeten to the patient's taste. The usual mode of administering it, is a tablespoonful every one, two or three hours. The pro portion of the stimulant can be varied *ad libitum*, to suit the age and condition of the patient; also the amount given and the interval between each dose. All this must depend upon the judgment and skill of the physician, and he must ever bear in mind that we are not now treating an inflammation, but the general condition of the patient. The topical applications of the mush and mustard should generally be kept up through this stage of the disease at intervals, followed each time by the inunctions over the chest. It is also sometimes necessary to control the fever in this stage, by occasional doses of Veratrum, especially during the evening exacerbations, which are still kept up. When the process of absorption is tardy, I have often thought that advantage was gained by giving the Muriate of Ammonia. Another object may be gained by this. If the experiments of Hammond to determine the cause of the fluidity of the blood have led him to a correct conclusion, viz: that it depends upon the Ammonia contained in the circulating fluid, we may rationally hope to do some. thing in this way, to prevent that terrible result in pneumonia—the formation of coagula in the heart.

The foregoing is a general outline of the treatment of pneumonia practiced by me for several years past. Under it, the mortality of this disease has been much less than under the excessive depletory treatment, which I practiced some years ago. Out of eighty-eight cases treated by myself and my son, in the winter and spring of 1869, there were three deaths, a mortality of a fraction less than 3.53 per cent. The cause of death in the fatal cases was as follows: Case first, infant, ten months old, bilateral pneumonia, complicated with pertussis, died on the sixth day in a paroxysm of suffocative dyspnœa. Case second, male, aged sixty-five, broncho-pneumonia, ninth attack, dismissed convalescent on the twelfth day; eight days afterward, after imprudent exposure, took a heavy chill, and died in forty-eight hours of congestion of the brain, without appreciable pulmonary trouble. Case third, child, one year old, bilateral pneumonia. The parents would enforce no treatment that promised a rational hope of success, and the case was abandoned. It died on the eighth day. Of the recoveries many cases were complicated with pertussis, and the general type of the disease was severe. Any general plan of treatment must of course be greatly modified, to meet the exigencies of individual cases. In drunkards, and very old and feeble subjects, and sometimes where the pneumonia occurs as an intercurrent disease in typus and typhoid fever, we must, from the beginning, resort to the plan of sustaining treatment. We need not fear to do this, for the great object we have in view is to nourish the patient, and sustain his vital powers. Further, we must bear in mind that the investigations of Brown-Sequard and Claude Bernard, have pretty conclusively established the fact, that the velocity of the current of blood is not increased during the prevalence of inflammatory action. The increased action of the heart is due to debility, which always accompanies high animal temperature, and the increase in the number of pulsations is simply a compensation for the loss of power in the contractile force of the heart. The truth of the above proposition is probably best illustrated by the great success of what is called the restora-

tive treatment of pneumonia in hospital practice. The patients there treated have usually been poorly nourished, and oftener still are far advanced in the disease when received. In such subjects the restorative is the only plan of treatment that is rationally adapted to the case. When a pneumonia results in abscess, or purulent infiltration, or gangrene, I know of no treatment that promises a rational hope of success. When we have prolonged the life of the patient to the last possible hour, and given him all the bodily stimulants that the resources of our art suggest, I believe we have done our whole duty. Although I have never seen it, I do not deny that such cases do sometimes recover, but I believe such recoveries always take place under sustaining treatment.

I have prolonged this paper much beyond the limits originally intended, and have also given it a more elementary cast than I had at first proposed. But I found that I must somewhat change my first plan, if I would render intelligible to every one what I had to say. I have purposely omitted any remarks on the anatomical characters of this disease, because in the few autopsies that I have witnessed, I have seen no appearances that are not fully described in any systematic work on the subject.

PREVAILING DISEASES.

BY J. R. BLACK, M. D., NEWARK, OHIO.

The Importance of a Concerted Account of the Prevailing Diseases and their Management throughout the State.

BY J. R. BLACK, M. D., NEWARK, OHIO.

The ambition of the physician is to be a conqueror of disease. This he cannot become unless he is a thorough master of its causes, effects and relations. To treat effects without a knowledge of causes is like attempting to solve the labyrinths of science by severing the clue, or it is like the method of the pathologist, who, with a speck of tuberculous matter under his microscope, expects and endeavors by a simple inspection of structure to be able to prevent its increase, or remove its accumulation in the organic bodies in which it is found. The peculiar cell of cancerous growths has long been familiar to the physician, yet this has not made its therapeutical management a whit more successful.

Prolonged, accurate and comprehensive observation is the only means through which the natural history of the causes of disease can be fully understood, as well as a leading means through which the practitioner of medicine is enabled to cope with and subdue it. I need only say in pertinent illustration of the latter truth, that the physician ignorant of causes and battling with effects, must oftentimes battle in vain, for the causes may generate effects as fast, or faster than any remedial means can remove them. Nay, ignorance of causes often leads to grosser mismanagement than this, or to the blunder of disturbing and weakening the body by potent drugs, when all that is needed to remove effects is a removal of the causes. An example of how this could happen was recently impressed upon my mind. A young man of good constitution and

sedentary habits applied for relief for what he was led to fear betokened some incipient brain disease. On awakening each morning he felt an oppressive, dull, stupefying headache, with languor and lassitude, causing him to feel even more wearied and unrefreshed in the morning than after the duties of the day in the evening. After stirring around for some time in the morning air, the headache gradually passed off only to return on the succeeding morning. Did these symptoms indicate some evening dissipation—some over-indulgence in viands, or was there actually incipient brain disease? Inquiry elicited no evidence of either. What then was the cause, and must cathartics or tonics be prescribed, as plethora or anemia seemed most to incline? Not either. The true cause of his disorder lay in rebreathing breathed or polluted air for the entire night, whereby the blood failed to receive its due quotum of vitalizing oxygen, and the air cells of the lungs to be washed of their impure exhalations. Attention to ventilation, or air movement through his bed room for the entire night, removed all the disordered symptoms at once, and without return. Suppose medicines had been prescribed for such case, the cause overlooked and continuing, the health and strength must have gone down only ending, it may be in death. Or take an ordinary case of nasal catarrh—a disease, by the way, from which nearly one-half of the people are suffering. Its development unquestionably arises from plunging, so to speak, the schneiderian membrane, first in hot, then in cold air. By our system of living the inmates of houses inhale for one moment air almost as dry and hot as that of the African desert, the next that out of doors, damp and chilling as that of Greenland. Plunging the hand alternately in hot and cold water soon irritates and inflames the tough skin, and what wonder that the delicate membrane of the respiratory passage should suffer in like manner from a like cause. Is it a matter for surprise that when endeavoring to remove effects, the cause overlooked and all the time continuing, there should be such a lack of success in its cure?

But I need not dwell upon what you all quite agree, the

necessity of a knowledge of causes to a skillful management of effects, nor need I dwell upon the lamentable fact that our knowledge of the causes of disease has made a very laggard progress—very little in advance of what it was a half century ago; and not at all commensurate with the improved knowledge in other departments of medicine, not to mention the extraordinary intellectual activity, the extraordinary progress in the arts and sciences outside of medicine.

The causes of disease may conveniently be divided into three groups; those produced by nature, those by art, and those by a union of the two. The most prominent of those produced by nature arise from the fluctuations of heat or cold, of moisture or aridity, the extremes of the seasons, the perturbations of electricity, the paludial eminations, the floating germs or molecules of organic matter, and the mystic force of the endemic and epidemic influence. The causes originating disease by the agency of art, are the stagnation and pollution of air in houses and compact towns and cities, the refinements, excesses and extravagances wrought upon foods and drinks, confinement in sunless apartments, the deficiency or excess of exercise, the insufficiency, inequality and constraint of clothing for the body, the untimely or excessive use of the sexual function, the lack of personal cleanliness, of adequate rest and sleep, removals to climates for which the constitution of the body is not adapted, and the introduction into the system of irritating and poisonous substances while pursuing some of the ordinary avocations. The influences of art in the production of disease are at their maximum in city life, and at their minimum in country life. Of course they are more or less commingled in nearly every instance of disease, and the preponderance of one or the other in any given case has a most important bearing upon the line of treatment which should be pursued. Take the case of an inflamed lung in a countryman with an abundant and highly organized blood, from the habitual respiration of pure air, exposure to sun light, abundant exercise, and the large consumption of wholesome and nutritious food; and that of the

feeble, cachectic, white-blooded, artfully fed denizen of a city, and it would prove a disastrous mode of management to treat them alike. Names are not things, and the pneumonia of a city is no more like, nor able to endure the treatment that it does in the country, than is the tender, weak muscular fibre of the one to endure the hard usage of the brawny muscular fibre of the other. Yet there is reason to believe that this mistake is very frequently and unthinkingly made. Because this or that treatment is pursued by Prof. A. or B. in a London, New York or Philadelphia hospital, it is straightway adopted by the practitioner upon the green hills of Ohio, and the plains of Indiana. The want of uniformity in the action of remedial agents, as well as one of the great sources for differences in opinion among doctors arises from the fact that the antecedent condition of patients differ, giving more or less contradictory results from the same medicine. A close study of their antecedents, or of the precise aggregate class and quality of causes operating upon this one or that one in the destruction of the health, must be formed in the mind, or else we must direct our medicaments upon disease by rote or random.

The British Medical Journal for May, 1869, contains a report by an Edinburgh committee on the action of mercury, podophillin, and taraxicum upon the biliary secretion—the import of which is that these agents in place of increasing the secretion, actually diminish it. Now, while this may be true of healthy animals experimented upon in the British Isles, it cannot be accepted as true of the bilious inhabitants of the Mississippi valley without discrediting evidences the most palpable and immediate. Yet such are the influences and *eclat* attached to foreign authorities upon our practice that we almost cease to think for ourselves, and accept as true here, what is true there. We neglect the culture appropriate to our clime in the eager race to copy after our cousins across the water. Having climatic, soil, vegetal and animal peculiarities, and a class of diseases thoroughly American, there should be modes of practice and a literature as

distinctly American. No more does the proper management of the stages of a disease vary than does that of some affections to be seen in the artful surroundings of a city, and amid the natural purity of the country. The wine, quinine and iron used so freely and beneficially upon the denizen of a city, would be disastrous upon him of the country. Instead of mitigating fever, increasing strength and comforting the patient, they would increase distress, oppression, heat and the torturing consciousness of morbific matter impinging on the periphery of a thousand nerves.

Not only is there a great difference in the nature of the diseases prevailing among urban and rural people, but there are marked differences between diseases prevailing in various portions of the State. How much do any of us know of this difference? Very little. This or that place is known to be infested by intermittent and remittent fevers, and this or that one is known not to be so infested, and here ends all knowledge of the matter.

In the eastern or hilly portion of the State, physicians say that typhoid fever and diptheria are its worst scourges, while in Licking county, where the hills melt into the undulating plain of the West, these diseases are very uncommon. In Newark, with a population of between eight and ten thousand, I have met with only eight cases of typhoid fever and two of diptheria in a period of six years.

The mortuary returns of the health officer of that place for the years 1868 and 1869—the only ones at all accurate—exhibit a total mortality of 160, of which but two were from typhoid fever. So far as I am aware this is an unexampled low per cent. of deaths from this disease. What explanation is there of such a fact? Confessedly none at all reliable—no comprehensive conception of the matter based upon a large number of closely observed and widely occurring causes.

Again, not a year passes during which physicians do not see some prevailing peculiar type of disease, or some form of disorder which rises to the foreground much more prominently one year than another. Some seasons show a preva-

lence of eruptive affections, another of anginose disorders, another of biliary, another of respiratory or intestinal diseases, and even during the vernal months of this year I have seen more cases of idiopathic irritation and inflammation of the bladder than I have for years. It is a very interesting and important point to determine whether or no such peculiarities are strictly local, or whether widely disseminated, for upon the one or the other greatly depends the ability to decide upon their natural or artificial production. How are we to know whether the causes of a disease are local or general unless facts are collated and compared over a wide area?

Labors of this kind are attempted with the more terrifying epidemics, like Asiatic Cholera, and it is to them that we are indebted for advanced views of its causes, mode of propagation and means of sanitary arrest. But nothing of this kind is attempted with the more common and less alarming phases of disease. We endeavor ambitiously to master only the sweeping problems and regard with indifference the elementary ones of every day disorders. Instead of commencing at the foot of the ladder and striving to master elements, we endeavor to vault at once upon the summit. If dysentery, typhoid fever, or erysipelas rages during a certain season in your or my vicinage, it is only by accident that you or I know whether other portions of the State suffer in a like manner. Dr. Bowditch has advanced the theory that the most influential factor in the production of pulmonary consumption is a damp or humid air, and lays particular stress upon the untoward effects of building houses upon a wet soil. In aiding to settle these, as well as many other important matters of etiology with bearings the most obvious upon therapeutical management what are we as members of an assembly doing? What new collection of facts, what new deductions, and new lights have been shed upon disease by the collective wisdom of the great State of Ohio? Are we contributors to the stores of original facts, giving them collective weight and force, or are we mere literary dabblers—borrowing from the pages of medical journals wherewith to exhibit plagiaristic

skill, or academic attainments. It is admitted that papers of great original value have appeared in our proceedings, but aside from the fact that the Society has been the means of drawing them out, they might as well, in fact far better have appeared in some medical journal, for they would have then reached readers by the thousand instead of by the hundred.

The most experienced publishers of metropolitan newspapers often endeavor to impress upon the publishers of country newspapers that their surest means of success is in being diligent gatherers of original local items. Every one who is a reader of country newspapers is aware that the first and sometimes the only part read is the local news. Now, local medical news from all parts of the State is precisely what will interest and profit every practical man, and it seems to me precisely what it is the special function of a State organization to effect. What varieties and characters of disease have you had to contend with during the past year, what the causes, and what the success of curative agents? A system of annual reports analogous to those made of agricultural, from each county or Congressional district of the State, embracing in a condensed form the medical history of sections and cities, or in other words, the typography and geography of disease, such as the peculiarities of the seasons, the prevailing disorders, their grade and mortality, with the most successful modes of management would invest the proceedings of this Society with peculiar interest —an interest as unique as it would be beneficial. In this way a condensed history of disease throughout the State for each year would be obtained and preserved, the relative influence of natural and artificial causes of disease would be more accurately determined, treatment and success more systematically compared, and this Society become the means more than ever of increasing and disseminating knowledge, not only amongst ourselves, but wherever modern civilization extends.

With all the progress of recent times we are yet destitute of an authentic history of disease and its management from year to year; we spend invaluable time in fruitless efforts to

determine whether the therapeutical changes of one period are the result of changes in disease, or to more improved views of pathology. One generation adopts the views and principles of treatment which another rejected, we seem to be ever traveling in circles, somewhat eccentric, it is true, now swinging to an extreme of depletion, and again to an extreme of stimulation.

Is it not true—I appeal especially to those whose heads are tinged with grey—that medical practice, like the fashions, continually repeats itself, that explanations of diseases, pathological conclusions and modes of treatment are undergoing constant repetitions, almost every new repeater imagining that he has struck on something new which is to lead to the most triumphant successes. Toward the close of the last century the distinguished rival of Cullen—Brown—carried the doctrine of stimulation in disease to as great, if not a greater pitch than Bennett of to-day. His doctrines, as all are aware, took deep and general root throughout Italy, and the sick were accordingly treated with great uniformity, even as some treat them to-day, with wine, ether, opium and ammonia. I am aware that the opinion obtains that disease as well as practice moves in circles, and that the transition from antimony and bleeding to quinine and wine, was produced by a general transition of disease from stethnia to asthenia. Very much of this is, however, mere opinion—there being no continuous history of such a transition, no unbroken record of facts upon which reliable and stable conclusions can rest. What wonder then that our ideas and practice should travel in circles—one extreme of opinion begetting the momentum to carry them to another.

It is an old saying that history repeats itself, just as are our ideas of disease and the modes of managing it. This is more or less the natural sequence of imperfect historical information and narrow perceptions, and besides, is the legitimate offspring of ignorance, passion and prejudice; the fanaticism of one extreme slowly but surely producing the reactive force to carry the rule of behavior to the opposite

point of the circle. True science does not thus travel. It may waver, now one way, then another, or it may, in nautical phrase, vary several points to the east or west of the polar star of direct progress, yet the general course is onward. Take the sciences of physiology, chemistry, geology and astronomy. Does the grand tide of thought to-day, in either of these branches, sweep over the same ground it did in the days of our father's? Very far from it. The vantage ground occupied by leading spirits in these departments of knowledge, has never been occupied before; views, facts, powers and deductions, hitherto unknown not even to the dreamy flights of that genius which is said to be allied to madness. But in our views of the principles of the practice of medicine, where is the vantage ground over that occupied three quarters of a century ago? Are we not going over the same old ground about stimulation and contra-stimulation. In no small measure is this circuitous tide of medical thought due to the lack of accurate historical information. Had each medical man a clear conception of the opinions, practices and successes of his predecessors, he would be pretty sure to avoid their extreme errors, their hobbies and their failures. But when men do not have such a conception, they are very liable to fall into the same old channels of thinking and doing, only to learn by painful experience that there is not half so much truth in their pet theories and practices as they once imagined.

In investigating the history, origin and development of the flora and fauna, but more especially of the species and varieties of any region, a fundamental requirement is to possess an accurate knowledge of their geographical distribution. Scarcely less important is it in an investigation of the history, origin and development of diseases to ascertain with accuracy their geographical distribution. In this way, and in this alone can we do away with much of the vague speculation about the parts which natural causes play in the production of disease. To this end, the history of disease not for one but for many years, needs to be known, and known

not imperfectly but thoroughly and minutely; so that in all our generalizations there shall be no radical fault from a limited or imperfect grasp of all the facts in the case. Such a work, and such an object it is in the power, nay, the only means by which it can be performed, is through an organization of this kind.

In an era like the present, when mankind are so wise and yet so weak, so powerful in their commands over nature, so rich in stores of knowledge, that they are even able to analyze and determine the elementary constitution of the sun and stars, and yet so weak, so poor in knowledge and power over themselves, that they are the most puny and sickly of beings, an incongruity which challenges our faith and labor to solve, it becomes us, not to hang like laggards in the rear of progress, but help more vigorously and effectually than ever before to raise him from his slough of disease, to rid him of his greatest curse, his greatest incubus, and make him strong where he is weak, and wise where he is ignorant.

In furtherance of these objects, an increase of our own knowledge and power are requisite, and such an increase it seems to me to be the peculiar prerogative of this society, to inaugurate and direct by centering the minds of its members on some common purpose, or to the solution of some of the many perplexing problems which yet retard the advancement of the healing art. Many of the causes of disease are so obscure, so subtle and so complicated, and operate withal upon subjects so diverse in their general and individual idiosyncrasies that no generalization is safe until compared and corrected by a large number of observers, and over a wide area.

It being within the power of collective bodies to accomplish what individuals cannot, it should be upon these objects that their energies should be fixed, and it is, we opine, only by attention to this cardinal principle that organizations can be efficient promoters of science, and throw around their proceedings a deep and abiding interest.

NERVOUS DISEASES.

BY W. J. CONKLIN, M.D., OF DAYTON, OHIO.

Report on the Temperature of Certain Nervous Diseases.

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If there is one thing more than another that gives character to the present era in medical history, it is the tendency to make use of collateral means in the investigation of disease. The stethoscope, sphygmograph, laryngoscope and thermometer, all tend to give a certainty to our examinations, unattainable in the earlier days of clinical study.

Thermometry is an outgrowth of the recent advances made in the departments of physics and physiology. True in the days of Hippocrates, the increase of bodily heat in disease was recognized, and Sanctorius, early in the 17th century, applied instruments for its measurement. During the succeeding hundred years, the thermometer almost passed from the memory of man, when its study was again revived through the labors of Boerhave. A few years later, DeHaen, a pupil of Boerhave, and the "first clinical teacher of Vienna and Germany," worked out many important facts connected with the subject, and gave them to the profession in his "Ratio Medendi."

Interesting as his investigations were, they fell still-born, and were compelled to await further advances in the kindred sciences of chemistry and physiology, before their full importance could be appreciated. Liebig, carrying out the in-

vestigations of the great Lavoisier as to the origin of animal heat, together with the brilliant discovery of Mayer, Helmholz, Joule and Grove, "of the correlation of the physical forces," and the mutual convertibility of the different forms of force without loss, placed thermometry on vantage ground, and since then its study has advanced with rapid strides.

In the present paper we propose to confine our discussion to one branch of the subject, i. e. the value of the thermometer in certain diseases of the nervous system.

The stability of the temperature in the healthy organism, furnishes the foundation upon which the superstructure of thermometry rests. It has been abundantly proven by different observers, that the ordinary surroundings of life and the ever-changing processes of nutrition and growth do not, in any notable degree, affect the diurnal variations peculiar to health. This makes the mensuration of bodily heat the surest test of health, and gives importance to those departures from the normal range found in disease.

This equability of temperature is most probably preserved through the influence of the nervous system. Brodie, supported by many of the ablest physiologists of his day, even attributed the origin of heat to the nervous system; and Chossat, afterwards, localized it in the sympathetic system.

Physiologists now generally agree that the healthy metamorphoses of the blood and tissues, and the temperature of the body, which is the result of such metamorphoses, are under the control of the nerves, and particularly of the sympathetic. So long as the integrity of the nervous system is unimpaired, like the governors to the engine, it is capable of so harmonizing the various forces of the body as to preserve under ordinary circumstances the normal standard of heat. Its function interfered with, either from some local trouble or blood-poison, a corresponding departure from the healthy range is registered by the thermometer.

The sympathetic is essentially the vaso-motor nerve, and consequently exercises a controlling influence over the phenomena of circulation, nutrition and heat. The experi-

ments of Bernard and Brown-Sequard, show that division of the cervical sympathetic causes, among other phenomena, dilatation of the arteries, and an increase of temperature on the operated side. Galvanizing the nerve produce a train of precisely opposite phenomena. Dr. William Ogle, reported a case to the Royal Medical Society, in which an abscess on the right side of the neck, had eaten through the cervical sympathetic. Among the symptoms noted, was the increased warmth of the ear, nostril and mouth of the right side when the patient was at rest. With violent exercise, the thermometrical conditions were inverted, the left side becoming the hotter. At the same time the left side of face, head and neck sweated profusely, while the right remained perfectly dry.

The vaso-motor nerves include not only fibres from the sympathetic, but also fibres from the cerebro-spinal system. The precise location of the vaso-motor center has not, as yet been positively ascertained. Lesions of the corpora striata and optic thalami affect the circulation on the side corresponding to the paralysis. Pathology shows that fibres of the sympathetic must extend higher up into the cerebrum, as many cases of lesion of this portion of the encephalon are on record, attended by phenomena similar to those produced by experiment.

Brown-Sequard, (*a*) sums up thus: "The effects of excitation of the vaso-motor nerves, consist essentially in a contraction of blood-vessels, which is followed by a diminution in the quantity of blood, in the temperature and in the activity of nutrition. The effects of interruption of continuity of the vaso-motor nerves (i. e. their paralysis) consist essentially in a paralytic dilatation of blood-vessels, which is followed by a greater afflux of blood, an increase of temperature, and a greater activity of nutrition." Dr. Robert T. Edes, (*b*) in his most excellent prize essay denies the proposition that increased nutritive action results from the increased blood supply in

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(*a*) Physiology and Pathology of Nervous Centres, p. 205.

(*b*) The Physiology and Pathology of the Sympathetic or Ganglonic Nervous System.

vaso-motor paralysis, and considers the "more active movement of the blood as amply sufficient to account for the rise of temperature." Assistant Surgeon Alcock, (*a*) in a paper read before the Army Medico-Chirurgical Society, of Portsmouth, considers preternatural heat to be the result of three conditions, "suspension or exhaustion of the functions of the sympathetic, diminished nutrition and increased metamorphoses, but believes the second and third to be consequences of the first." While it is true in a large majority of cases, that a departure from healthy nutrition follows the withdrawal of the proper nerve stimulant, it is also true that lesions dependent upon irritation are often relieved by section of the nerve. Oftentimes bed sores heal readily in paralyzed parts. In a case of hemiplegia recently under observation the sloughs rapidly healed under the dry earth dressing.

Dr. Annandale in a recent number of the Edinburgh Medical Journal, reports the case of a paraplegic of twenty years standing, who fell from his bed and fractured both bones of the leg, about three inches above the ankle. The limb was put up in a starch bandage, and on removing the dressing ten weeks after the injury, the bones were found firmly united.

Although numerous cases, both pathological and experimental, can be cited, in which nutrition is not materially interfered with, difficult as it is to explain them, the fact still remains that affections of nutrition usually follow injury to nerves. Irritation probably plays a more important part in their production than paralysis of the vaso-motors.

The foregoing principles furnish the clue to the interpretation of the pathological conditions met with in injury to and disease of either the mixed nerves or the cerebro-spinal centres.

The extremes of temperature are met with in lesions of the nervous system. Concussion of brain and shock, giving the lowest and tetanus the highest temperatures on record.

(*a*) Medical Times and Gazette, February, 1869.

Brodie gives a case of forcible separation of the 5th and 6th cervical vertebræ, with laceration of the cord, in which the temperature between the scrotum and thigh was 111 deg. F. The man died in twenty two hours after receiving the injury. Surgeon Manipold (*a*) reports two cases of fracture of spine, causing paralysis of lower limbs, in both of which the temperature was much reduced. In one there was fracture of the 12th dorsal vertebra. When the patient was admitted into the hospital, fourteen months after the accident, sensation was natural but paralysis of motion still existed. The thermometer gave the temperature of the upper extremity 99 3-4 deg. F., while that of the lower extremity was only 78 deg. F., making a difference of 21 3-4 deg. F. between the two extremities. There was an ulcer on the left heel (caused by a nail) at the time of the accident, which had never got well. When the temperature was raised by artificial means, the ulcer slowly healed under appropriate treatment. This case is interesting, both in showing the very unusual loss of heat in the paralyzed parts, and the effect upon the reparative power of the limb. In a case, under the care of M. Hutchinson, (*b*) of fracture at fourth dorsal vertebra, the temperature taken the day after the injury was 101 deg. at the ankles and 104 deg. at the pelvis. Under the service of Mr. Erichsen a man was admitted into University College Hospital, with fracture at sixth cervical from a fall. The thermometer indicated a temperature of 98.6 deg. a few hours after receipt of injury. The following day epileptiform convulsions ensued, the mercury rose to 106.8 deg. and 109 deg. when he died. The autopsy showed the cord, at a point corresponding to fracture, "swollen, pinkish and softened."

In a case of acute softening of spinal cord, treated in St. Bartholomew's Hospital, in which the paralysis of the lower extremities was complete as to motion, partial as to sensation, the temperature in the earlier stages ranged from 100.4 deg. to 104.8 deg. in axilla, and from 100.3 deg. to 105.4 deg. at

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(*a*) Medical Mirror, March, 1869.
(*b*) Lancet, May, 1869.

perineum. The temperature fell as the case progressed, with the perineum constantly indicating from 1 deg. to 2 deg. higher than the axilla. It was only 96 deg. in axilla and 97.6 deg. at perineum when death occurred (*a*). Ollivier (*b*) gives the history of a man in whom, after a fall upon his back, there was "anæsthesia of right side and retained paralysis of motion of the left side. The temperature, taken three months after the accident, was 3 1-2 deg. higher on the left than on the right side.

Earle (*c*) reports a case of complete paralysis of left arm following fracture of the clavicle, in which the temperature in left axilla was 4 deg. lower than on normal side. "In a case reported by Waters, a man was struck on right side of head by a capstan-bar. The next day there was numbness of right side of face and right arm and leg. A partial loss of power was observed in these parts and the right side was of a higher temperature than left. The autopsy showed a clot of blood lying on right side of posterior aspect of medulla oblongata, and two lacerations, one of which divided the right restiform body completely * *: and a second, situated to the right of rib of calamus scriptorius, dividing posterior pyramid and tract outside of it."(*d*) Dr. Webber cites a case of paralysis of right side, in which the temperature of the paralyzed side was 5 per cent. higher than on healthy side. The autopsy disclosed a clot of blood in internal half of left crus cerebri. (*e*)

A man admitted into hospital ship "Dreadnought," suffered from paralysis of motion in lower limbs, dating back to an injury received some time previously. A few weeks after admission he had several "fits," resulting in hemiphlegia of right side. The thermometer stood on right side 98.2 deg.—left side 97.3 deg. During the progress of the disease the

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(*a*) Lancet, November, 1869.
(*b*) Romberg; Diseases of Nervous System, vol. 1, p. 201.
(*c*) Ibid, page 202.
(*d*) Med. Chir. Trans. Trans. XLVI, page 115. Quoted by Edes, loc. cit. page 97.
(*e*) Ibid.

paralyzed side generally registered about a degree higher than the normal side. Autopsy revealed both lateral ventricles dilated: A "patch of softening which passed directly from without the left corpus striatum to the gray matter at surface." Marked softening of the spinal cord was also found at a point corresponding to third dorsal vertebra.(*a*)

A man, aged 33, was admitted into University College Hospital, under the care of Dr. Hare, suffering from hemiplegia of right side. Five days previously he had an attack, from which he perfectly recovered in a day or two. The right side of the face was flushed and covered with large drops of perspiration; the right sides of chest and abdomen also presented the same inequality of moisture, though in a less degree than the face. The temperature in right axilla, 100 deg.; left axilla, 98.5 deg. The patient rapidly recovered, and in four weeks there was no appreciable difference in the moisture of the two sides, and the thermometer registered the same degree in both axillæ. Two months afterwards he had another attack which proved fatal in a few hours. The man had an aneurism of the arch of the aorta. The vessels on the surface were distended and the lateral ventricles contained a a large quantity of serous fluid. No minute examination of the brain was made.(*a*)

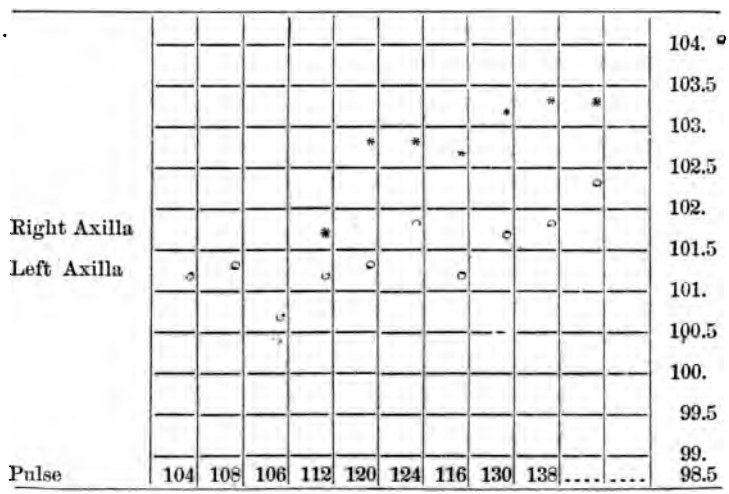
An interesting case of alternate right and left unilateral convulsions and hemiplegia is reported by Dr. Alexander Robertson.(*b*) Unfortunately we have but a meagre thermometrical report. A man, aged 43, suffered from necrosis of the skull—the result of a fall received fourteen months previously. Some time afterwards he was seized with convulsions, confined at first to the left side, but gradually became general. The left side was found to be paralyzed. He was trephined when consciousness returned. The affected side gradually regained its power. Later, convulsions again began, confined at first to the right, but gradually involving the left side, when

(*a*) British Med. Journal. Quoted in Hammond's Journal for Jan., 1869.
(*b*) Edinburgh Journal, Dec., 1869.

right hemiplegia was found to exist. A hernia formed at the point trephined and the brain substance freely sloughed. The temperature taken in right axilla was 100.8 deg.; left, 100.2 deg. The autopsy showed a "deep cavity in parietal lobe, capable of holding about three ounces of fluid." In the right hemisphere, on the "posterio parietal lobule there was a superficial, softened and eroded spot about the size of a shilling."

The following case occurred recently in the Southern Ohio Lunatic Asylum: A woman, aged 68, in ordinary health, complained of pain along the spine and upper part of neck. The pain increased in severity, until the least movement caused her intense suffering. She passed large quantities of urine and sweated profusely. A few hours afterwards she sank into a comatose condition, which lasted for twenty hours, when she gradually regained consciousness and for several days her mental operations seemed as active as usual. The severity of the pain had passed away, but still any attempt at moving her caused her to cry out. The urine still continued largely in excess of the usual amount and the sweating profuse. The thermometer indicated a temperature ranging from 100.4 deg. to 101.8 deg. in the morning and from 100.7 deg. to 102.3 deg. in the evening. Pulse ranging from 94 to 128 beats per minute. Subsequently she again relapsed into a comatose condition, with the mercury standing at 100.8 deg. Before consciousness had fully returned, paralysis of the right side was suspected, which suspicion was immediately verified by the thermometer; it affording, in the difference of temperature between the two sides, the first reliable indication of the lesion. At first, the difference in heat was only 3-10 deg., which gradually increased as the paralysis became marked, the average difference being about

1 deg. The progress of the case is shown in the diagram given below:



M. B., female, aged 43, was admitted into the asylum after the second apoplectic seizure, with complete paralysis of left side. There is but little difference in the development of the opposite limbs. Five months after the paralysis occurred the following ranges of temperature were taken:

	Morning average.	Evening average.
Sound side	98.25 deg.	98.30 deg.
Paralyzed side	98.40 deg.	99.90 deg

Showing an increase of heat on diseased side over both the morning and evening ranges of the healthy side—the evening giving the greatest difference. Both sides also show an increase of the evening over the morning temperatures; the larger difference being found on the paralyzed side. Another interesting fact observed is, that in the first series of observations, began immediately after her admission, the rule was to find a slight fall in temperature from morning to evening on the healthy side, while the diseased side presented a slight rise of the evening over the morning temperature. The case, though still under observation, is slowly improving, and

its improvement is marked by the nearer approach of the temperature of the paralyzed limbs to the normal standard.

M. G., a male, aged 54, admitted with hemiplegia of right side. Paralysis of one year's duration. Right limbs decidedly atrophied.

	Morning average.	Evening average.
Healthy side	99.37 deg.	99.07 deg.
Paralyzed side	98.23 deg.	98.20 deg.

This case presents quite a thermometrical contrast with the previous one. 1st. The temperature of the healthy side is considerably increased, while that of the paralyzed side seems about normal. He is subject to rheumatism, and at the time the observations were made was threatened with an attack, which may probably be the explanation of the increased temperature of the non-paralyzed limbs. 2d. There is a fall from morning to evening on both sides, more marked on the paralyzed side.

T. S. suffered from an apoplectic seizure in May, 1869, resulting in hemiplegia of the right side. The thermometer, for the first few days succeeding the attack, ranged from 99 deg. to 102 deg. The paralyzed side was constantly from 3-10 to 1 deg. hotter than the opposite side. The paralysis gradually improved; the temperature also fell until the thermometric equilibrium was restored.

Charcot (*a*) has shown that in apoplexy the result of either cerebral hemorrhage or softening, if it be of a fatal character, the temperature will present three periods.

1st. A lowering of the degree during the first few hours.

2d. An oscillation between the normal temperature and 100 deg., which may last a variable number of days.

3d. A rapid rise to 105 deg. or more, which foretells death.

The cases given in the preceding pages are found to be confirmatory of the views of Eulenberg and Landois, who consider the temperature of paralyzed parts to go through two stages, in the first of which it is increased and in the second decreased.

(*a*) Quoted in Dublin Quarterly, November, 1869.

M. Folet (*a*) concludes, as the result of his observations, "In the great majority of cases hemiplegia is accompanied from its commencement by an elevation of the temperature of the paralyzed part: calorific equilibrium persists very rarely and diminution of temperature is rarely ever met with.

"The period of duration of the elevation varies extremely in different cases. Whilst in certain patients, especially in those who have not been attacked suddenly with hemiplegia, it may not continue longer than two months, it may in other individuals persist for many years.

"Well marked paralytic atrophy is accompanied by a variable depression of the temperature."

The following table of cases observed at the Bicetre and quoted by Dr. Edes, gives the condition in old cases, of the affected side compared with the temperature of the sound limb:

1—3 years	Little or no atrophy	0.8
2—1 year	No atrophy	0.6
3—20 months	Slight deltoid atrophy	
4—4 years	Atrophy slightly advanced	
5—6 years	" " "	
6—Old	" " "	0.2
7—8 years	Atrophy	0.2
8—7 months	Slight atrophy	0.6
9—18 months	Atrophy	0.6
10—7 years	"	0.8

The following table gives the condition in five cases observed in the asylum:

1—1 year	Atrophy well marked	1.12
2—1 year	No atrophy	0.3
3—3 years	No atrophy	0.2
4—6 months	No atrophy	0.4
5—2 days	No atrophy	1.0

In 39 cases of hemiplegia examined by Dr. Robertson, (*b*) the temperature in 22 cases was less on the paralyzed side than the healtby—the degree varying from 1-5 to 1 3-5 deg. Nine were equal, and in eight cases the paralyzed side showed an increase of heat. There is no reference to the length of time the paralysis has continued, hence we are unable to institute a comparison.

(*a*) Gazette Heb. No. 12, 1867. Quoted in Half Yearly Abstract, 1867.
(*b*) Edinburgh Journal, December, 1869.

The rule is to find a primary increase of heat due to paresis of the vaso-motor nerves, causing an increased amount of blood to circulate in the capillaries of the heart. Healthy nutrition is dependent upon other causes than the mere presence of blood, and the withdrawal of the ordinary nerve stimulus ultimately interferes with assimilation, and atrophy results. At this period the thermometer indicates a diminution of heat even below the normal standard. In those cases of persistent hemiplegia, in which nutrition does not seem materially impaired, there is at some time in the history a restoration of the thermometric equilibrium.

It is not improbable that the heat of the lesion causing the paralysis may influence the amount of difference between the opposite sides.

Brown-Sequard (*a*) gives, as the result of his observations, the following variations of temperature as most frequently occurring in the lesions set opposite; involving, of course, only a lateral half of the cerebro-spinal axis.

1st. In lesions of the brain proper, optic thalamus or corpus striatum the temperature is normal on the same side, and increased on the opposite side.

2d. When the lesion is seated in the pons varolii, in the medulla oblongata either above or at the level of the decussation of the anterior pyramids and in the spinal cord, the temperature is increased on the same side and diminished on the opposite side.

I have tabulated below the thermometrical ranges of 90 cases of insanity occurring in females. The observations were made with an Aitkin's self-registering thermometer.

Two observations were made daily; in the morning, between the hours of eight and ten o'clock; in the evening, between the hours of three and five.

The instrument was retained in the axilla six minutes. In each case the temperature was taken for several successive

(*a*) Loc. Cit., page 203.

days, and the averages thus obtained were used to compute the averages for the different forms of disease.

Form of Disease.	No. of cases.	Morning.	Evening.	Mean.	Excess in morning.	Excess in evening.
Mania, Acute	15	98.70°	98.90°	98.80°	.....	.20
Mania, Chronic	15	98.53	98.34	98.49	.19	.....
Melancholia	16	98.01	98.14	98.08	.....	.13
Dementia	11	98.19	98.53	98.36	.....	.34
Puerperal Insanity.	12	98.65	98.84	98.75	.....	.19
Phthisical "	8	99.25	100.00	99.63	.....	.75
Epileptic "	13	98.70	98.89	98.80	.....	.19
Normal temperature	.....	98.36	98.25	98.31	.11	.....

In comparing the averages as given in the above table, it will be noticed that, excluding phthisical and epileptic insanity, the different types do not present any marked difference in their thermometrical ranges. This similarity is not what we would at first thought expect to find, though the explanation is apparent. Insanity is not an entity; but is a diseased mental condition, probably always dependent on a morbid physical state. Dr. Gundry (*a*) writes: "In a large proportion of cases the health had been impaired shortly before, or at the time when insanity was first observed. It may be considered perhaps as an exaggeration to say that the failure to discover this in every case may possibly be due more to the imperfection of our methods and means of observation than to its absence, yet it cannot be gainsaid that with greater care the evidence of physical disease immediately previous to or accompanying the attack might be detected in a much larger proportion of cases than it now appears." Dr. Gray (*b*) says: "Insanity is a pathologic state of the physical man, whether discovered or not. The person may have no special or well-marked disease, but is in general ill health, is run down in tone and reaching a certain point the brain gives way and he is insane." Maudsley holds: "In reality every moral cause operates through the physical changes which it produces, and in the great majority of cases in which the cause has

(*a*) Eighth Annual Rep. of S. O. L. Asylum.
(*b*) Report of N. Y. State Asylum.

been pronounced moral, there has been something in the physical constitution by the co-operation of which the result has been brought about." Insanity, then, in a medical point of view, is but the mental expression of physical diseases acting on the brain. While not unfrequently the particular physical lesion may give type or character to the mental phenomena, yet as any lesion may be causative of any one of the three grand divisions of mental disease—mania, melancholia and dementia—we should expect the thermometrical reading, in any special case, to vary with the lesion causing it.

The foregoing remarks apply with greater force to the time at which the insanity manifests itself. For it must be remembered that, although incurable physical lesions generally beget incurable mental troubles, it is not essential to the continuance of the insanity that the bodily lesion should be persistent; and it not unfrequently happens that curable diseases beget incurable insanity. When the pathological habit has once replaced the normal physiological habit, it tends to reproduce itself, and the mental disorder continues after the cause has been removed. At any rate, in many of the cases, even at the time of their admission into the asylum, the causative bodily lesion had disappeared, and consequently could not affect the thermometry of the cases.

Mania.—In Acute Mania we find the morning average to be 98.70 deg. and the evening 98.90 deg., showing an increase over the normal temperature both in the morning and evening. The evening average exceeds that of the morning by 2 degrees.

The majority of the cases figuring in the above average were typical ones, the patients refusing food, tearing their clothes and bed-clothing, sleeping but little, and had to be confined to secure the observation.

The fact that the thermometer marks so slight an increase over the normal temperature proves that the expenditure of vital power is less than the condition of the patient would indicate. We are thus enabled to better understand those cases in which the period of excitement extends over months, and the physical condition continues to improve. The tempera-

ture varies with the condition of the patient at the time the observation is made. In an interval of quiescence the temperature is lower than during the period of excitement. When, as not unfrequently happens, the vital powers succumb to the prolonged excitement, the thermometer very accurately points out the danger and oftentimes furnishes the earliest indication. In a case which proceeded to a fatal termination from exhaustion, while the patient was apparently in no way different from her condition for the previous three weeks—very noisy and destroying everything within her reach—the thermometer registered a temperature of 101 and 102 deg., and in three days she died.

Dr. Fox (*a*) holds the following language: "As the excitement tells upon the strength the mercury generally falls; and if a patient dies in a maniacal attack, the temperature will be one of collapse, falling even 4 or 5 deg. below the normal." The case first alluded to, together with several others which have come under my notice, compels me to doubt the accuracy of Dr. Fox's statement. Invariably in the exhaustion which follows an attack of mania, I have found the temperature materially increased, ranging from 98.9 to 100 degrees.

Chronic Mania, including cases from 1 year to 20 years, gave 98.53 deg. as the morning average and 98.34 deg. in the evening. When the force of the disease is expended, and the patient has settled down into the regular habits of asylum life, the temperature is lower than in the acute form. The diurnal variations more nearly approach those of the healthy adult. Although the patient is in a constant state of exaltation, the pathological habit has been thoroughly established, the system has become tolerant, and the heat is but little above that of health. In no form of insanity have I found so great individual differences of heat as in Chronic Mania, ranging all the way from 97.5 to 99.5 deg. In three cases of over ten years duration the mercury never stands lower than 98.5 deg. and almost constantly over 99 deg.; yet there is no proof of any special disease to account for the unusual

(*a*) Med. Times and Gazette, May, 1870.

altitude. The same individuals, also, oftentimes present considerable differences in temperature. This is well marked in circular insanity, and especially in that form in which the periods of quiescence may last for months. Dr. Clousten found a difference of 2.2 deg. computing the averages in four cases. The greatest average difference I have recorded is 1.5 deg. This case always presents quite decided increase in her periods of excitement from which she emerges greatly emaciated and exhausted.

Melancholia.—The averages in sixteen Melancholic patients gives 98.01 deg. for the morning and 98.14 deg. for the evening temperature in this form of disease. This is a decided diminution when compared with the results obtained either in health or the other forms of mental disease. The evening temperature, however, is higher than the morning. The lowest average obtained in any individual case was 96.23 deg. and the highest was 99.00 deg.

Melancholia is characterized by the sluggish condition of all the organs; the skin loses its freshness and becomes harsh and dry; the pulse is slow, and the respiration is often drawn with the sigh. Most generally the digestive organs sympathize with the general depression. With a poor appetite aided by a worse digestion the powers of life are brought below the normal standard. In looking over my observations I find the lowest averages to be cases of melancholia, and occurring in that form of the disease in which there is persistent refusal of food. In several cases of dementia, in which the patients took no nourishment excepting as the nurses put it in their mouths, the thermometer registered an unusual elevation of temperature. In these cases the refusal of food seemed to arise from a want of sufficient intelligence to appreciate and satisfy the wants of nature; but in the cases above alluded to, refusal seemed to arise from a feeling of unworthiness on the part of the patient—she had been so wicked the Lord did not wish her to eat. In one case the patient said she had two mouths and the food always got in the wrong one.

The cases of dementia examined gave the morning average

98.19 deg. and 98.53 in the evening. Thus dementia, the natural sequence of all forms of mental degeneration, in which the afflicted sit vegetating all day long, and oftentimes in their helplessness require the same care as infants, has a mean temperature higher than in melancholia; and the evening rise is even in excess of that in chronic mania.

The great difference between the morning and evening altitudes—34 deg.—indicates progressive disease and points out the death rate in the class. I am well aware that the temperature above given is higher than that obtained by other observers. One, in passing through the wards and observing the dementia, with congested extremities, blank expressionless face, the remnant of former mental fire, apparently just flickering in the socket preparatory to its final going out, would hardly expect to find the temperature so high. However the patients, upon whom the observations entering into the above average were made, are as strongly marked cases of the class as any in the asylum. All those complicated with epilepsy, and those in whom we had good reasons to suspect the deposit of tubercle were excluded. There are, however, two facts to be borne in mind. 1st. That the demented, excluding acute dementia, are often pretty well advanced in years. 2d. The condition of system produced by or at least accompanying dementia, is precisely that most prone to latent phthisis. In a table prepared by Dr. Clousten for another purpose, I find that in 282 deaths from phthisis in the Royal Edinburgh Asylum 153 occurred in the demented. While in 181 deaths from other than tubercular disease only 49 were cases of dementia. Thus it will be seen that dementia is credited with nearly one-half of the tubercular cases and with only a little more than one-fourth of the deaths from other causes. Most authors now recognize a peculiar form of disease having much in common with dementia, under the name of phthisical insanity. In one of the cases taken in the above average, in whom there can be no question as to her mental condition being that of dementia,

and one too of several years' duration, the average morning temperature was 98.27 deg. and the evening 99.30 deg., giving an increase in the evening altitude of 1.03 deg., without any apparent cause for the high temperature. The thermometrical reading would point to tubercular deposit, but there is, as yet, nothing to confirm it. Maudley says, "the recurring attacks of excitement in some cases of dementia, when there appears to be a slow softening of the brain advancing by periodical starts, the temperature will rise several degrees during the exacerbation, sinking afterwards to its natural standard."

Puerperal Insanity—The insanity caused by child-bearing and lactation always gave a high temperature. The average was 98.65 deg. in the morning and 98.84 deg. in the evening. In every puerperal case thermometrized, with a single exception, there was an increase of the evening over the morning temperature; the excess varying from one-tenth of a degree to one and one-tenth degrees. The lowest mean temperature was 98.26 deg.—the highest 99.27 deg.

In a paper read before the Obstetrical Society of London on "Puerperal Temperatures," Mr. Squire gives the following as the result of his investigations: In the latter months of pregnancy the temperature of the body is somewhat increased and after the sixth month generally exceeds 99 deg. The commotion and efforts of parturition while confined within the limits of natural labor cause but little elevation in the temperature. In his cases the highest reading was 99.9 deg.—the lowest series in any case had only a range of 98.9 to 99.1 deg. In a majority of cases the temperature rose after delivery and stood about 99 deg. The elevation thus occasioned immediately after delivery invariably experienced a continuous decline and often even descended below the normal line. Another rise ushers in the secretion of milk and subsides with its establishment.

In reviewing my observations and comparing them with the temperatures obtained by Mr. Squire, I find that the temperature in puerperal insanity differs but little from the

temperature during the latter months of pregnancy and for a variable period succeeding delivery.

The cases are brought to the asylum at a variable period succeeding confinement and consequently I have been unable to secure a connected thermometrical history beginning prior to the insanity and extending through the attack to health. One case, in whom the insanity was doubtless dependent upon pregnancy, gave birth to a fœtus advanced to about the seventh month, which from several circumstances seemed to be the result of self-produced abortion. The thermal range taken about one month previous to the occurrence was 98.6 deg. In six hours afterwards the mercury stood at 98.9 deg., and gradually fell to 98.65 deg. The third morning the thermometer read 98.85 deg., and on examining the breasts a few drops of milk were found. The secretion of milk was very slight, and on the sixth day the mercury only reached 98.4 deg., about which it has since ranged.

Phthisical Insanity.—In this form of mental disease the thermometer is most valuable to the asylum physician. Those symptoms, cough and expectoration, which to the world at large tell unmistakably of the deposit of tubercle in the lungs, are often absent during the entire course of the disease in the insane. Even the results of physical exploration upon which the expert so confidently makes his diagnosis, are very often most unsatisfactory among the insane.

Not unfrequently patients are brought to the asylum worn out and exhausted by protracted refusal of food and sleeplessness, in whom neither the friends nor the examining physician through the absence of the well known symptoms suspected lung trouble, but who are already far advanced in phthisis. The thermometer, however, almost always tells the fatal story in the high temperature which it persistently records. The averages as given in the table are higher than for any other form of insanity. The excess of the evening over the morning temperature—5-10 of a degree—is also greater. In a very large majority of cases the temperature is high whether the tuberculization is active or not. It is

highly probable that in some instances the nervous system may, in some of its protean manifestations, so mask the temperature as to prevent the variations peculiar to consumption. Oftentimes there seems to be a sort of metastasis between insanity and phthisis; so that phthisis occurring in an insane person relieves the mental symptoms for the time being, and not unfrequently an attack of insanity in a person already tuberculous arrests temporarily the tuberculization; in these cases the thermometer shows only a slight increase above normal.

Several cases recently admitted into the asylum with an antecedent history of lung trouble far advanced, as given both by the attending physician and family—patients much emaciated and physical examination affording confirmatory evidence, the temperature range is extremely low, varying from 96 to 98.9 deg. I have no means, of course, of ascertaining what the heat measured before the development of the mental disturbance, but inasmuch as the patients are increasing in flesh and gaining in health, contrary to the previous history, it seems probable that the attack of insanity has arrested the development of tubercle, and interfered in some way with the calorific function.

The following case has interest in this connection. M. B., aged 30, insane for two years. The greater portion of the last fifteen months of her life, during which time she was under observation, her general health steadily failed. She became very much emaciated, although having a ravenous appetite. There was no cough or expectoration. The thermometer never registered higher than 97.4 deg., even when retained in the axilla for twenty minutes, and on many occasions did not exceed 95.2 deg. The average of all observations made is 96.26 deg. for the morning, and 96.63 deg. for the evening; showing an increase of four-tenths in the evening heat. The thermometer twenty minutes before death only registered 95.8 deg.

On opening the chest the lungs were found deeply congested, the right rather more than the left. The whole sub-

stance was thickly studded with tubercles. Numerous small vomicæ were found scattered in every portion of the lungs. The apices were almost totally destroyed by cavities. Small black spots were scattered both on the surface and in the substance of the lung, some seemed to be a mere staining of the tissue, while others were solid and cut as if it were a deposit of some kind. Unfortunately the brain was not examined.

Epileptic Insanity.—In epileptic insanity the temperature is high. The range for the morning is 98.70 deg. and for the evening is 98.89 deg. Marked differences in temperature occur in epileptics, both when the same individual is examined at different times and in persons whose condition, mentally or physically, is apparently the same. In two demented epileptics, having many points in common, but differing in physique and duration of mental disease, one presented an average temperature of 99.09 deg. in the morning and an evening average of 88.9 deg.; the second had a range of 97.42 deg. in the morning and 97.8 in the evening.

The above comparisons were made at a time when they had both been free from their fits for three weeks. When the latter had a fit about every twelve hours for several successive days the temperature ran up to 98.6 deg. in the morning and 99 deg. in the evening, presenting an increase of one and two-tenth degrees. This leads us to speak of the effect the fit itself exerts upon the temperature. It is difficult to obtain observations just before the fit begins and I have only been fortunate enough to secure three such observations. In every instance there was a slight fall in the thermometer of from one to three-tenths. In one case the thermometer stood at 97.8 deg. immediately preceding the convulsion, and at 98.6 during the sleep which followed it. The average in this case was ascertained to be 98.9 deg. Repeated observations on different persons show a lowering of temperature immediately after the fit, ranging one degree to one tenth of a degree. In a short time the temperature begins to rise, and in from 8 to ten hours has attained the usual altitude.

A case, whose fits had ceased for some weeks, re-appeared in a succession of fifty or more, the fits occurring with great regularity about every ten minutes. Towards the middle of the series the thermometer registered 102.4 deg. between the fits and gradually ran up to 103 deg. when the convulsive movements began. Three hours after the fits ceased the mercury stood at 101-4 deg. twelve hours after at 100 deg., and for the three succeeding days had a morning altitude of 99.6 deg. Her daily average taken from observations made at times when she was free from fits is 98.96 deg. in the morning and in the evening 99.50. Several times in using the thermometer after she had suffered from a single fit I found a depression of temperature which gradually increased, returning to the ordinary temperature in about twelve hours. From the history of the above case, which agrees with my observation in others, it will be noticed that a single fit depresses the temperature, while a number of fits increases it for the time.

I am inclined to think, from my experience in the use of the thermometer, that those cases of epilepsy in which the fits are often replaced by explosions of anger so characteristic of the disease, have ordinarily a higher temperature than simple epilepsy.

CANTHARISM.

BY ALEX. M'BRIDE, M. D., OF BEREA, O.

CANTHARISM.

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Cantharism is a term which I have applied to an induced physiological condition not hitherto described. The condition thus termed is a peculiar and salutary one, which is established in the human economy by a few large doses, (tozj. to fozv. repeated) or a long continuance of small doses, (m.xx to m.xxx repeated) of Cantharides. Quinism, Ergotism and Iodism are terms of analogous derivation, but they each express a pathological or non-salutary condition, resulting from over-dose or idiosyncrasy. I do not know whether my term, as an expression of a fact, or the fact itself, has a precise analogue unless it be true, as I have heard stated, that men who work in the woods and fields, where the rhus toxicodendron abounds, sometimes chew a small portion of the leaves or bark of that shrub as a certain preventive of its poisonous action on the skin; it is also said that the vapor of alcoholic liquors cause intoxication of persons much exposed to them, unless a small quantity of the liquor is taken into the stomach.

My proposition is: that the taking of Cantharides into the stomach in considerable quantity, or for a length of time in small quantity, affects the system in such manner, or produces such a state of physiological resistance, that the application of fly plaster, or other preparations of the fly to the skin, will not produce vesication. The state thus produced I have termed *cantharism.*

Members of this Society are aware that for several years I have recommended a much more extensive use of Cantharides

than has been made; and I now assure them that my own practice has been consistent with my advice in the premises, and it has been in connexion with such liberal use of this excellent remedy that I have observed the above fact.

I had not long followed my present method of administering Cantharides till I observed that fly plasters were very tardy in visicatory effect after the free use of the tincture internally. Blistering, for a general or revulsive effort, does not appear to me at all necessary in cases where the copious internal use of the remedy is practiced, but in the early days of my liberal use of the fly I frequently followed or accompanied it with blisters, and when early applied or conjointly with the first dose of the medicine they were operative to produce visication; but the general effect of a blister appears to me identical with that of an equivalent dose of the tincture of the fly. At a later stage, or after the system is fully under the effect of the medicine, no effect will be perceived from the application of a blister plaster distinguishable from that of the medicine internally, and the local effect will be exceedingly slight or null. It may be objected with fair plausibility that as the cases in which such quantities of this medicine were given were advanced cases, and almost moribund, the failure of the blister was owing to loss of susceptibility in the skin, to their action, from the advanced state of disease.

This certainly might be true of some cases at the commencement of this kind of treatment, but it could hardly be true two, three or four days afterward, when the patient had rallied, and the extremities and skin had assumed their natural warmth, color and sensibility. In those cases where visication took place, more or less perfectly, the exudation was very slight and the surface soon healed. In some a slight redness was produced, and in others there was no perceptible effect; the amount of effect appearing to be inversely in proportion to the amount of the medicine that had been taken. I think blistering cannot be indicated under this treatment except for purely local considerations, and in that case it will probably be non-effective.

A case recently occurred which somewhat surprised me, notwithstanding my extensive observations. A young woman for many weeks had been able to take but little food—two or three of the smallest crackers and a cup or two of tea in the day, and some days less; she menstruated slightly, did not lose flesh extremely, kept up and did a little work. There was some of the time slight indications of mania. The pathological condition was not apparent, and being unable yet to retain in the stomach sufficient, either of food or medicine, such as the case seemed to require, and the circulation being very feeble, I prescribed Tr. Canth. in dose of 6 to 10 drops, three times per day. The medicine seeming to have a good effect it was continued, with occasional intermissions, for about two months. At about this time I directed the application of a fly plaster to relieve a pain in the side which she had for sometime complained of. Although the plaster was applied several times and kept on for long periods, it produced no local effect whatever; the plaster I know to be of good active quality, and she had a fine, delicate, good colored skin. Here was a clear instance of *cantharism* from the small dose long continued.

The dose in this case, I have no doubt, was as large and effective in proportion to the gastric capacity and general resistance of the patient as 20 or 25 drops would have been for ordinary patients. The entire amount taken was nearly an ounce; about as much as I have given in some extreme cases in one or two days. The patient got well without much other treatment.

The cases in which I have had most frequent opportunity to notice this effect of the medicine have been of very different kinds from the one described. They were mostly cases in a dangerous extremity of disease; cases where death was imminent from congestion, engorgement, blood stasis or collapse; such as cases of typhoid pneumonia, congestion intermittent, congestive stage of continued and malarious fevers, cholera, choleroid and the like. In some of these cases the induction of the state of cantharism produces a very inter-

esting effect. The congestion, flux or chill is usually arrested or checked by about two to three drachms of the medicine in one to two hours time. The change begins to be observable in usually 15 to 30 minutes; sometimes an hour or more is required; the exalted frequency of the pulse abates, its thready or gaseous and evanescent character assumes a definite form under the finger; the livid features assume their natural color, warmth returns to the extremities, the moist rattling of the lungs abates, fear and despair vanish and hope is restored. In an hour or more the dose is repeated to confirm the good impression, and so on, in less dose, from time to time, according to indication. Soon there will be copious evacuation of dark colored urine; there will be evidence of re-established capillary circulation in all the members and organs; there will be freedom from pain, dyspnœa, nausea; freedom from fear of death. The patient generally recovers, but of course not in cases where vital organs or tissues are already destroyed. The foregoing effects will often be witnessed in cases where recovery is hopeless or impossible, in consequence of the amount of disease or destruction of organs and tissues. In those cases life is prolonged sometimes for several hours and sometimes for days.

Such cases are sometimes more interesting, if possible, than those which recover. I have seen cases in which disease, having already nearly completed its work, seemed to be suddenly suspended; those functions not destroyed by disease were aroused to vigorous exertion, the last vestiges of fuel were forced in to temporarily rekindle the expiring spark of life, and thus the patient lived for hours and days, the taste and appetite partially restored so that food was taken with some gusto, tobacco chewed or smoked and wines and liquors taken with a relish, and the mind had a dreamy clearness; the urine was regularly voided but growing paler and less. A casual observer would think there was a hopeful improvement, but a close scrutinizer will see in his countenance the shadow of the coming event; life is prolonged merely because from the active state of the capillaries, no further congestion

or efflux is admissible. This is cantharism in articulo mortis, or *suspension of death.*

The physiological state of cantharism, then, appears to be a state of universal tonicity of the capillaries; which implies an active state of the secretions generally, which implied condition is the fact according to my observation.

If any one who hears or reads this is desirous of witnessing these effects of cantharides, I here notify him that he will never see them unless he discards wholly the notions prevalent about their aphrodisiac effects, and also the fear of producing troublesome strangury. It must be used with the freedom and fearlessness with which Paregoric and Nitrous Ether are used. There is prevalent an unreasonable prejudice and an unaccountable misapprehension concerning the therapeutic, toxic and physiological effects of this drug. Of its aphrodisiac action I have met with no instance whatever during the sixteen years in which I have used it thus freely; neither have I met with one case of troublesome strangury caused by it, though I have often known that symptom relieved by the same in a certain class of cases.

Priapism and its troublesome accompaniments are toxic effects resulting from over-dose—one-half to an ounce of the tincture—and do not belong to the category which I have denominated *cantharism.*

The state of cantharism can be produced as perfectly by application of the fly-plaster as by internal use of the tincture, and for this effect vesication is not at all necessary. About 100 superficial inches of fly-plaster laid on the trunk of the body, retained an hour, then removed and the surface washed so as to prevent vesication, will produce as much general or revulsive effect as 1½ to 2 drachms of the tincture administered internally. This method I practiced in the army, in several instances, when I could not command the tincture.

Nearly all physicians seem to regard the fly-plaster as merely a counter-irritant, and suppose its revulsive effect results from counter-irritation. It will be seen by the foregoing that counter-irration is the least part of its value. To

further prove this let any one in a case of stasis or congestion apply a large epispastic and closely observe what follows. In about thirty minutes the pulse will improve, the features will be less livid and the rattle in the chest, if it be congestion of the lungs, will begin to abate; remove, if you please, the plaster now, or half an hour later, wash the surface and it will show no sign of irritation although the effect aimed at is procured. Under the same circumstances give 1½ to 2 drachms of the tincture and the same effects will follow in twenty minutes. In many cases the effect from either method will be much slower in manifestation; the promptness of action will depend on the condition of the skin in the one case, and upon the susceptibility of the stomach in the other.

With regard to strangury, it should be borne in mind that I have said it does not occur when the medicine is given on proper indication for its use; when the engorged or paralyzed condition of the capillaries call for its action; but when no such condition exists, that disagreeable symptom is liable to follow the use of about 1½ drachms, but this is not a serious difficulty for a good opiate will in a short time allay it. Even this small trouble has occurred to me but few times and is no more than many times follows a blister.

In view of the facts here set forth, together with the large amount of facts which I have elsewhere published, relative to the action of cantharides, it is hoped that intelligent physicians will no longer entertain groundless fears, but avail themselves of the vast benefits of this excellent remedy.

REPORT ON OBITUARIES.

BY EDWARD B. STEVENS, M.D., OF CINCINNATI.

REPORT ON OBITUARIES.

BY EDWARD B. STEVENS, M.D., OF CINCINNATI.

Your Committee have received material for memoirs of the following members who have deceased during the year:

Dr. Daniel Tilden; Dr. John G. Kyle; Dr. A Merriman; Dr. Landon C. Rives.

The memoirs are quite full, and place these departed brothers right on the record, worthy in their relations to society and the profession, we may confidently trust their works do follow them.

The following sketch is taken from the *Sandusky Register*:

DR. DANIEL TILDEN,

Of Sandusky, was born August 19, 1788, in the village of Lebanon, Grafton county, New Hampshire. He was named after his uncle, Colonel Daniel Tilden, of Revolutionary fame. His father, with four brothers, served in the Revolutionary war, all were taken prisoners, and all came out of the struggle with honorable scars.

The Doctor was educated at the public schools in his native town until ten years of age, when his father who was a merchant in Lebanon, removed to Whitestown, New York, and settled on a farm. Here Daniel was educated as a farmer in the summer, where he doubtless received much of the physical vigor which in after life enabled him to endure the arduous labors which he experienced in the practice of his profession in a new country. During the winter seasons he attended school until seventeen years of age, when, through

the business misfortunes of his father, Daniel was thrown upon his own resources. Having by his own exertions been able to put a little money in his pocket, and having received a literary degree from Clinton College, New York, he selected the profession of medicine as a calling worthy of his endeavors, and entered the office of Dr. Joseph White, of Cherry Valley, in 1807.

Failing in health, he traveled during the summer and fall of the same year, and then returned to the office of Drs. White & Caprou, where he continued his readings and recitations until May, 1809, when he attended his first course of medical lectures at Fairfield, New York, where he continued his studies until the Spring of 1811. During the summer and fall of 1811 he continued his studies under the tutelage of, and practiced with Dr. Scott Hastings, a physician of celebrity, when he entered Dartmouth College, and received his degree of M. D. in the spring of 1812. During the same year he was examined by the State Board of Regents for the State of New York, in session at Albany, and received a diploma from that body of medical men. In the year 1827 he also received an honorary degree from the Berkshire Medical College of Massachusetts.

On April 10, 1814, he married Nancy Drake, a sister of Colonel C. F. Drake, now in Government employ on Green Island, and formerly an old resident of this city.

In the spring of 1817, having been charmed with the wonderful stories of the "Far West," he arranged a wagon train, and started from Casinova, New York, for the Firelands. After a long and tedious journey, he, with his family and others, crossed the Huron river on the 3d of July, and on the next day completed the journey and settled at a point on the prairies, now known as Cooke's Corners. Many of his old friends and survivors will recall the enthusiasm with which he used to speak of the beauties of the prairies, as he, for the first time, looked over them, on the morning of that national birth-day. Enamored as he was by the fertility of the boundless acres, which were spread around him, so beautifully

blanketed to his vision, it is not strange that he invested largely in lands. A purchase of two thousand acres of such lands seemed a fortune to one accustomed to the more barren lands of the East; but a little experience taught him that the income was inversely to the size of the farm, and with hundreds of others, he soon found himself "land-poor."

In 1825 he removed to Norwalk, Huron county, and taking into partnership Dr. William F. Kitteredge, from Massachusetts, who is still a resident of Norwalk, devoted himself to the practice of medicine and surgery.

He, at this time, had become largely known, and often rode over the then scarcely settled country, long distances, to attend to professional calls, even from the adjacent counties.

One evening the Doctor was called upon by the chief of the Senecas, then located near where Tiffin now stands, to go at once and see his son, very ill of a pleurisy. He mounted his horse and followed the lead of the chief, as he led the way along the trail through the forests, in the dark of the night, until they reached the hut where the royal patient awaited the coming of the white man's medicine man. All possible speed was made on the part of the anxious chief and father, with the white man's doctor; but they arrived too late. After the father left, the son's disease grew so much worse that the red man's doctor was called to his relief. With nothing to guide him but the empirical fact that the local abstraction of blood sometimes gave relief, the red man's doctor took the bottom out of a powder-horn, and after scarifying the surface over the seat of the pain, placed the open end of the horn over the bleeding scratches, and with his mouth placed over the small opening in the tip of the instrument, drew a horn full of blood. This rude mode of cupping had so relieved the patient that the doctor, when he arrived, had but little to do, and, after taking a little rest, he started for home. When he reached there he found drawn up before his door a little Indian cart loaded with 100 pounds of maple sugar as his *honorarium* for services rendered a royal family.

In 1828 he was elected to the State Senate and being re-elected, held the position until 1835. In 1839, he left Norwalk and came to Sandusky where he continued in the practice of medicine until some two years before his death, when the infirmities of age obliged him to give up entirely what they had from time to time forced him to relinquish in part. Thus at the age of nearly four score years, he threw off the professional mantle which he had worn for nearly sixty years, doing meantime an amount of professional labor greater than most other men could have endured.

He was for several years president of the Erie county Medical Society; and for a series of years was its delegate in the Ohio State Medical Society; was also its delegate to the American Medical Association and elected as one of the vice-presidents of that body in 1854. In 1857, at its session in this city, he was elected president of the Ohio State Medical Society. In 1856 he was made an honorary member of the New York Medical Society. Such is an outline view of the more prominent landmarks along the pathway of a protracted and most busy life. A man of broad views and keen discernment, he took extended out-looks, was always emphatic in his opinions and bold in their advocacy.

As a husband and a father, he was always devoted, affectionate, kind and indulgent. In his treatment of the sick he was always attentive and faithful in his efforts, hopeful, rich in expedients and repartee; oftentimes curing his patients with pleasent and hopeful promises where medicine alone, would have failed, esteeming it better, as he once told the writer, that a patient should die in good humor, than to be frightened to death by the length of his doctor's face.

On the 19th of August, 1868, on the invitation of Mrs Mills, his daughter, he greeted a large party of his old friends who came in to celebrate his 80th birthday. His health continued good for a man of his years until the last of December following, when he was taken rather severely ill, and from that time on until death relieved him of the burdens of life, he was a great sufferer. He rarely admitted through his protracted

illness that he suffered much physical pain, but his mental condition was strangely peculiar, and with the helplessness which grew upon him with each passing month, he was often heard to exclaim that he was miserable, and longer life was undesirable to him, and although sometimes impatient for delivery from his sufferings, yet in his reflective moments he expressed a willingness to submit in resignation and abide his time without a murmur.

As the warm days of spring came, he seemed to decline in strength, and without the intervention of any active disease he gradually failed until on the morning of the 7th of May, 1870, he sank away and died without a struggle, in the 82d year of his age.

All that the most devoted affection could do to render his last days comfortable, was done, and it was a most afflicting thought to those who were exhausting every human resource for his comfort, that he who had done so much for the relief of others should himself be so uncomfortable despite all the attention which devoted affection could bestow.

The burial obsequies took place from his late home on Hancock street, on Tuesday, May 10th, under the direction of the Masonic Fraternity of this city. The remains were followed by the family and relatives—the physicians of the city—and a large concourse of friends from the city and vicinity.

DR. JOHN G. KYLE, OF XENIA.

This memoir of Dr. Kyle is prepared from the funeral address of Chaplain J. P. Pattenton, on the occasion of services by the Post of Grand Army of Republic, of which Dr. Kyle was Commandant at the time of his decease.

Dr. John G. Kyle was born in this county, September 22d, 1819, and passed away on the 4th of March, 1870, making his calm and earnest life to thread more than half a century of our country's most eventful history. At the age of twelve years, he was a fluent reader of the Latin tongue, a fact, now in the light of circumstances, reflecting the solid character of the man in future years. Long before he had reached his

majority, he was graduated at Hanover College in a neighboring State. A fond and doting father had, as he thought, wisely marked the future career of the young man; but the inclinations of the son and Providence seemed to demand the consecration of his life in another sphere, and accordingly the fascinations of the medical field lured him thither. As events are but the embodiment of ideas, so his success in the healing art but portrays his master passion for medical lore. With scanty means he urged his way and in all the dark hours of his studentship he maintained a buoyant spirit, until he stood a favorite graduate of Cincinnati's most eminent college. His devotion to his calling was only equalled by his desire to ameliorate suffering, for on the morning of the day that he received the fatal stroke, his smile and kind hand greeted the little orphans in their homes, and already he was becoming the center of attraction in that circle of little hearts. We say not too much, when we state that his desire to do the orphans good, far transcended his ability in body to meet their wants. He was in spirit truly the Soldiers' Orphans' father. We dismiss this part of the subject with the thought that he was appealed to as a safe and wise counsellor in his profession, adding the reflection, that now he in turn is the victim of fatal disease.

Dr. Kyle was progressive in his spirit, and especially was he devoted to the idea of a liberal education. His bereaved and mourning children will recall with pleasure his, now doubly sacred words, "Get a good education, for the world can never have a lien on it." Again and again has he said to intimate friends, "A sound erudition is the chief legacy that I desire to leave to my children." As an educational friend we will miss him. As a citizen in our midst he was quiet and unassuming. We dare not pass over his private life without recurring to the great and potent truth, that his whole life is a polished stone in the ever growing temple of temperance. He was orthodox on this subject and when the direst of diseases was preying on his body, he refused with Luther-like courage, any aid from ardent spirits.

During the war he gave a firm hand to the support of the dear old flag. He was among the first to heed the surgeon's call in '61. Soon after the battle of Rich Mountain, Va., we find Dr. Kyle surgeon in charge of General Hospital near the same place. When the battle of Carnifax Ferry was fought, our Governor called for volunteer surgeons. Our departed comrade, then at home from his three months service, gladly yielded his extensive practice and heeded the summons. At the place named he was made chief in charge of General Hospital. After the lapse of a few weeks there was tendered to him, unsolicited, a surgeon's position in the 65th O. V. I. He united his destiny with this regiment. They marched through the long and toilsome ways in Kentucky and Tennessee. At Corinth, Mississippi, our comrade, as surgeon, displayed untiring zeal in behalf of the wounded boys. At Huntsville, Alabama, he was attacked with typhoid fever. After a long combat with the disease, he returned home on leave of absence, wearing more the marks of death in his ghastly countenance than does the cold clay now in the coffin. He, upon partial recovery, so great was his zeal to be with his command, returned to the same. Soon the disease wore its threatening aspect and he was induced to resign. Twice after his return home, did our excellent Governor, unsolicited, bestow special marks of honor on the surgeon of worthy reputation in sending him to care for the sick and wounded boys of Stone River and Chicamauga. Our loyal Magistrate knew full well who would prove efficient in our nation's great need. Though our commandant was distinguished in his army life in his masterly skill of the catlin and saw, he was, also, prominent for the faculty he possessed in ingratiating himself in the affections of the soldiers. That quality, *so rare* in surgeons, of making himself loveable, was proverbial in the military life of Surgeon Kyle. While he stood forth as a true apostle of Esculapius, he overshadowed all by his Havelock-like devotion. Did he plant his tents on the sunburnt field? soon around them his hand of devotion planted the evergreen forest, and the home-sick boys within seemed

to live in a new heaven. He stood out against strong opposition of higher authority and would carry with him extra hospital tents, saying he preferred to keep the boys with him and not leave them to the mercies of strange comrades, when despair and home-sickness would do more damage than preying disease. Neatness was characteristic of him in all his army life. For this he merited and did receive unbounded praise. In discoursing upon the patriotism of our dead comrade, we are to remember that much of his service was of the voluntary character. At any time during the war would he sacrifice practice and patients at home to meet the wants of loyal soldiers in the field.

From all these facts may we, fellow comrades, draw enduring lessons, and here together renew our plighted vows, *more* for each other *to live.* May we follow in kind thought and tender sympathy and if need be with our substance, this bereaved family. God grant that the children may live to be honorable reflections of their noble father.

The profession of Xenia held a meeting and took appropriate action in regard to the death of Dr. Kyle.

Dr. A. Merriman, of Madison.

At a regular meeting of the Lake Shore Medical Society, held at Madison, Ohio, June 3d, 1868, Dr. Plympton, from the committee appointed to prepare an obituary upon the death of the late Dr. A. Merriman, of Madison, Ohio, presented the following report, which was unanimously adopted, viz:

Dr. A. Merriman was born in Dalton, Berkshire co., Mass., on the 14th of July, 1795. He was the son of a farmer, and at an early age manifested a desire to become a physician. But it seems likely that he was indebted more to the influence of an incidental circumstance for his success in becoming a student of medicine, than to the strength of his desire. A man of his neighborhood had, in accidentally cutting his foot, divided an important blood-vessel, while the only physician of the town was far away. In spite of the dressings applied

by the frightened neighbors, the wound continued to bleed so rapidly as to threaten the man with immediate death. Dr. M., then a lad of some dozen years, concluded that the blood could not as easily run up hill as down, caused the wounded man to lie down and taking the foot in hand, stood and held it up as high as the length of the limb would allow, until surgical help could be obtained.

The Doctor, on arriving, was so much pleased with the philosophy of the plan, and the success that attended its execution, that he took the lad home with him, insisting that he should become a doctor as soon as he should become of suitable age.

After pursuing the study of Latin for some time under the instruction of the parish minister, he commenced the study of medicine in the office of Dr. Dorance, with whom he remained several years, and subsequently closed his term of study by attending a course of lectures delivered by Dr. Hosack in the Medical College of New York.

In the spring of 1817 he left his New England home and arrived in Madison, Ohio, on the 17th of June, being then in the 22d year of his age. "Here," he said, "he stuck his stake, determined to revolve around it so long as there was disease to combat or pain to subdue." Fifty years have witnessed the carrying out of this resolution with a record of labor performed, of hardships endured, that few, if any, in the State of Ohio can equal.

To measure the magnitude of his labors and hardships, we must go back to that time when the Indian's hunting grounds had but recently passed into the possession of a few widely scattered inhabitants, many of whom were too poor to have any title to the land they occupied, living in log cabins, with few of the necessaries of life and none of its comforts; when there were few roads and no bridges, rendering it necessary to swim rivers and ford creeks; and then pursue the line of travel through undrained swamps and impenetrable forests, still tenanted by the bear, the wolf and the panther; while with a sharp eye he must keep a look out for the marked

weep with him in affliction and rejoice with him in prosperity. He, moreover, possessed an unblemished christian character, having spent nearly fifty years in training himself to walk in the footsteps of Him who went about doing good. And if patience and resignation through a long and painful sickness is an evidence of a successful training, then may we hope that he has found a home among the pure in heart, and celestially virtuous in the "mansion of rest."

In his departure a widow, four daughters, and a host of loving friends are left to mourn, remembering that the last end

> "Of the good man is peace, how calm his exit;
> Night dews fall not more gentle to the ground,
> Nor weary, worn-out winds expire so soft;
> Behold him in the evening-tide of life—
> A life well spent—whose early care it was
> Its riper years should not ubraid its green,
> By unperceived degrees he wears away,
> Yet like the sun seems larger at his sitting."

Resolved, That in the death of Dr. Merriman this Society has lost a conspicuous and worthy member, whose devotion to the wants of suffering humanity will be long remembered, both by the community in which he labored, and the profession to which he belonged.

Resolved, That the ardor with which, from youth to age, he engaged in the pursuit of medical knowledge, the zeal and assiduity with which he performed the duties of his profession; and the genial character which he exhibited as a man in the practice of all the virtues which most distinguish the citizen and the christian, Doct. Merriman has furnished an example to which all may aspire but none hope to excel.

Resolved, That we sympathize with the family of the deceased in their afflictive bereavement, and tender them our sincere and unaffected condolence, and commend them to the care of that All Wise Disposer of events who is plenteous in mercy to all who confide in his goodness.

DR. LANDON CABELL RIVES, OF CINCINNATI.

Dr. Landon Cabell Rives was born on the 24th day of October, 1790, at Union Hill, Nelson county, Virginia, the residence of his maternal grandfather, Col. Wm. Cabell.

His early life was passed in a circle of society refined and

cultivated—for at that time no country was more celebrated for its intellectual culture and social refinement than Virginia.

Dr. Rives was born in the midst of affluence, which afforded him opportunities of improvement of which he always availed himself. In his boyhood he had for his teacher a Mr. Ogiloil, brought to this country from Scotland by Mr. Thomas Jefferson. Dr. Rives and his brother, Wm. C. Rives were prepared by this gentlemen for college. They both entered and gradu. ated at " *William and Mary.*"

At this period the subject of this memoir was thrown into frequent intercourse with Jefferson, Madison, Monroe, Patrick Henry, Marshall, Mason, Leigh and a host of others whose names are enrolled in the history of our country. Such association with high bred gentlemen in the early life of Dr. Rives had a lasting effect upon his character.

Medicine was not the profession chosen at first for his occupation in life by his father—who wished his eldest son to follow in his footsteps and devote his life to commercial pursuits. His father was a merchant of Richmond, Va., and his transanctions extended to many foreign ports, and he was also an extensive ship owner. A branch of the house at Lisbon, Portugal, was in want of a head and Dr. Rives was selected by his father to take charge of that position; but at this period a strong tie bound him to his country, which prevented the consummation of his father's plan, and resulted in his marriage to Miss Anna Maria Towles.

About this time he was seized with an unconquerable desire make the science of medicine his life's business. Accordingly, at the age of *twenty-nine*, (29) he abandoned commerce and began the study of the profession for which he proved himself so singularly and admirably fitted.

In 1819 he attended his first course of medical lectures in Philadelphia, at the University of Pennsylvania, and was a private pupil of Dr. Chapman, for whom he entertained throughout his life the profoundest respect and admiration.

In 1821 he graduated and returned to Virginia to settle in his native county, and as an unusual instance of immediate

success, it is worthy of note that he made more money the first year of his professional career than in any single year afterwards. This was owing to the prevalence of typhoid fever and the scarcity of medical advice in that section of country in which he lived.

He remained in Virginia until 1829, when he resolved to move to the West with his young family, and as Cincinnati was at that time the most prosperous of the Western cities, he determined to visit this city with reference to a removal; and in July, 1829, he left his family to make the trip on horseback.

The result of his investigations was a removal with his family, in November, 1829, to the city of Cincinnati. Dr. Rives was warmly received by Dr. Daniel Drake, who already was a leading physician, and to whom he brought a letter of introduction. This was the beginning of a close intimacy and friendship which only terminated with death.

Dr. Drake took the stranger cordially by the hand and the day after his arrival called him in consultation in the family of Judge McLean. This was his first case in Cincinnati, but before the winter was over he had his hands full, and for a long period Dr. Rives had a larger family practice than any physician in the city.

In 1834 the Medical Department of the Cincinnati College was organized. Drs. Drake, Rives, Gross, McDowell, Harrison, Jamison and Rogers formed the faculty. The following year Dr. Jamison retired and Dr. Willard Parker was selected and induced to accept a chair by Dr. Rives, who went especially to Woodstock, Vt., to see Dr. Parker on the subject. After a few years of great prosperity, and with a corps of professors unexcelled anywhere, the Cincinnati College collapsed, owing to internal dissensions which the more peaceful members of the faculty (of whom Dr. Rives was one) could not assuage.

Dr. Rives had given a large amount of his time and money to aid the success of the institution, and its failure was a

source of lifelong regret. He afterwards filled a chair in the Ohio Medical College.

As a teacher Dr. Rives stood unsurpassed. Besides his scholarly attainments, he had a most remarkable faculty of attaching students to him personally, and without even resorting to familiarity he could always make his "young gentlemen" (as he called them) feel that in him they not only had an instructor but a friend who sympathized with them and would aid them in all their upward struggles.

As a practitioner Dr. Rives was as successful as a teacher, and won his patients as he did his students, not only by his great attainments but by his ever ready and tender sympathy.

The moral influence of such a man over his patients can not be overestimated. His gentle manner and his calm composure under the most trying circumstances were powerful aids to his undoubted skill.

To say that Dr. Rives was untiring in his efforts to relieve suffering humanity in seasons of epidemics especially, is, it is true, what can be said of every unselfish and devoted physician, but many yet live in this city to tell of the touching reliance which was placed in Dr. Rives by all who employed him in visitations of that terrible scourge cholera, which has on three occasions during his life visited the city. The manly fortitude, zeal, and unselfishness which such occasions revealed, can never be forgotten by those who were thrown with him. Many a heart throbbing with anxiety and fear has beaten naturally and calmly at the sight of Dr. Rives, whose very presence seemed to inspire calmness and self-possession.

Dr. Rives retired from the practice of medicine in 1857. The last years of his life were passed in much seclusion in the companionship of his children and a few cherished friends.

We have spoken of Dr. Rives in his public life, but in his domestic and social relations his pure character was most beautifully exhibited. On these sacred precincts we would

not tread. As husband, father, friend, his life was holy and true.

The comforts of Christian religion gave to Dr. Rives a consoling and cheering peace. He was sustained by its holy precepts in his last hours on earth. In his death Dr. Rives exhibited the same traits for which he was so distinguished in life—unselfish, considerate, calm, courageous, and above all a true Christian, he passed from earth as peacefully as one who "wraps the drapery of his couch around him and lies down to pleasant dreams."

A POEM.

BY JOHN M. BROWN, M.D.

Read before the Ohio State Medical Society, on the occasion of its Twenty-fifth Anniversary, Cleveland. June 14th, 1870.

Another year has passed away,
And round her burning central sun—
The shining source of life and day—
The earth again her course has run.

Through constellations fair and bright,
Speeding forever, ever on,
Through summer, winter, day and night,
She on her Zodiac way has gone.

June;—first-born child of summer skies,
Whose voice bids countless flowers arise,
While all the leafy forests ring
With notes ten thousand warblers sing;—
June calls—and we, *too*, hear her voice;
And at its summons do rejoice
To gather annually here,
To tell the trials and the cheer
Which we have met, as on we trod
Our paths of duty marked of God.

Years five and twenty are now told
Since our Society enrolled,
With inexperienced hand, its name
Among the candidates for fame:—
Fame which its sons should nobly win
Unstained with blood—unsoiled with sin;
Not that which *war* is wont to yield
The victor on the gory field.

Not laurels such as *thence* are brought
Has our association sought
To have its members win or wear,
Though bright and proud such laurels are.

Nor would she come with shout and song
From *noble* lips, or *motley* throng,
To deck our brows with civic bays;
Or glad our ears with voice of praise,
Such as e'erwhile was loudly given
To child of genius—child of heaven—
Such honors NOBLEST minds have sought,
And yet *we* ask them—seek them *not.*

Nor do we strive to win the meed
Nations and ages have decreed
To gifted minds, whose wisdom rare
Has raised the fabric proud and fair,
Of PUBLIC LAW, both wise and just,
Which ever has, and ever must,
A nation's strength and glory be,
And make its people SAFE and free.

Who frames SUCH LAW—builds such a STATE,
Is nobly wise, and wisely great.
His fame an angel pure might crave,
It knows no death, it finds no grave.

What, then! are all the aims we know
Ignobly humble? meanly low?
Are all the paths our feet have trod,
Although assigned us by that God
Whose providence rules over all,
Whose eye beholds the sparrow's fall:
Who guides the angel as he flies
On wings of light across the skies;
Has he—the God who governs thus—
In all the sphere appointed us
Naught but INGLORIOUS TASKS assigned,
To which inglorious motives bind?
Far otherwise has gracious heaven
Our sphere of life—and life-work given.

Then may we not, in triumph, ask
WHO IS IT calls us to our task?
Is it the giddy thoughtless crowd?
Whose lusts and passions clamor loud
And whose low appetites alone
Are all the Trinity they own;
Whose hunger, thirst, and carnal lust

Sink them to brutes, bow them to dust.
Is it from these that the Physician
Receives his call, and his commission?

Or is it fashion's souless throng?
Who float in thoughtlessness along,
Like insects on the summer streams
Or those that dance in summer beams?
Or like the bubbles "on the river
A moment bright, then gone forever?"
Is it from human insects thus,
That our commission comes to us?
Is it the buzzing of *their* wings
From which our proud profession springs?
Is it the glitter wealth can fling
Around the meanest human thing?

Oh, is it these, or one, or all,
That we mistake for Heaven's call
Binding us, intellect and heart,
To our profession? Science? Art?

Only as these our *pity* crave,
To hold them back from folly's grave—
As these—the votaries of fashion
Bespeak, and wake, in deep *compassion;*
'Tis thus their *cry*, and *only* thus,
Becomes the call of God to us.

I will not ask if lust or gain—
Mere love of gold—may not remain.
Look at our *work!* look at our *pay!*
Look at our walks from day to day
'Mid scenes of sorrow and distress—
Of pains—and woes—and wretchedness.

Oh, look at these! oh, look, and say,
If the Physician "*works* for *pay!*"
For what he *does*, and feels each hour
Mere *gold* were recompense but poor.

Still, it is asked, whence is the call?
That wakes, controls and moves us all?
What noble ends—what motives—bind
Our spirits to the task assigned?
God calls us—by the piteous moan

Of pain—the tear, the cry, the groan,
Of childhood's anguish, manhood's fear;
In these the voice of God we hear;
It bids us see the sufferer's grief;
It bids us go to his relief.

When childhood weeps beside the bed,
Where lies a mother's aching head,
While anguish burns through every vein,
While quivers every nerve with pain,
Yet heeding not her own distress
She sees her poor child's wretchedness,
And groans—while tears stand in her eye—
"Oh, must I leave my child and die?"
Ah! in that groan, and in that tear,
Again the *call of God* we hear,
A call that moves our soul to try
And save that mother ere she die.
'Tis thus she cries
Of pains that rise
From earth and pierce the very skies,
Call us to feel;—
Call us to heal:—
The woes that grieve our ears—our eyes.
In these we hear,
In accents clear,
Forever something far and near.
God's holy call,
That bids us all
To toil, to pray; nor faint, nor fear!
How can we faint?
What can we fear?
For God commands us—God is near.

CONSTITUTION.

OF THE

OHIO STATE MEDICAL SOCIETY.

ARTICLE I.

SEC. 1. This association shall be called the "OHIO STATE MEDICAL SOCIETY," and shall be composed of resident and honorary members.

ARTICLE II.

SEC. 1. The Society shall constantly have in view:

First—The association of the profession, for the purposes of mutual recognition and fellowship;

Second—The maintenance of union, harmony and good government among its members, thereby promoting the character, interests, honor and usefulness of the profession;

Third—The cultivation and advancement of medical science and literature, and the elevation of the standard of professional education.

ARTICLE III.

SEC. 1. The resident members shall be regular practitioners of medicine and surgery in the State of Ohio, who shall be elected by vote of a majority at any regular meeting, their eligibility having been previously reported upon by the Committee on Admissions.

ARTICLE IV.

SEC. 1. Honorary members shall only be admitted by a vote of two-thirds of the members present, at a regular meeting, having first been recommended by the Committee on

Admissions. The whole number of honorary members shall not exceed one hundred.

ARTICLE V.

SEC. 1. A vote of two-thirds of the members present shall be requisite for the expulsion of a member, which vote shall be had in consequence of a report from the Committee on Ethics, at the next regular meeting subsequent to such report.

ARTICLE VI.

SEC. 1. The officers of this Society shall be a President, four Vice-Presidents, two Secretaries, a Treasurer and Librarian, all of whom shall be elected annually, by ballot, and a majority vote, at the regular meeting. They shall severally perform the duties assigned in the By-Laws, as shall also the standing committees.

ARTICLE VII.

SEC. 1. The following Standing Committees shall be annually appointed by the President, and shall each consist of five members: 1st, an Executive Committee; 2d, a Committee on Finance; 3d, on Publication; 4th, on Medical Ethics; 5th, on Medical Socities. A standing Committee on Admissions, of like number, shall be elected by ballot, and a majority vote, at the same meeting, annually.

ARTICLE VIII.

SEC. 1. No part of this Constitution shall be repealed, annulled, altered or amended, except at a regular meeting, subsequent to one at which a proposition to that effect may have been made in writing, and then only by a vote of four-fifths of all the members present.

AMENDMENT TO ARTICLE III., CONSTITUTION.

Resolved, That the officers of the several County or District Societies, auxiliary to the State Medical Society, be requested each year to report to the secretary of said Society the names of all their members, to serve as a basis for the medical statistics of the State; and that the several Colleges of the State furnish the Secretary with a list of their graduates, annually; and that no physician, not in good standing in his own County or District Society, shall hereafter be admitted as a member of the State Medical Society.

BY-LAWS.

ARTICLE I.—MEETINGS.

SEC. 1. At all meetings the presence of fifteen resident members shall be necessary to constitute a quorum.

ARTICLE II.—OFFICERS.

SEC. 1. The President shall be elected annually, at the regular meeting in June, by nomination, ballot and majority vote. He shall preside, enforce a due observance of the Constitution and By Laws, see that all members of committees and officers perform their respective duties, appoint all committees not otherwise provided for, give the casting vote only, sign diplomas and all other official documents requiring his signature, and perform such other duties as appertain to his office by usage and custom.

SEC. 2. The Vice Presidents shall assist the President in the performance of his duties; in his absence, shall preside in order of seniority, rank being determined by the number of votes cast for each at his election. If the number of votes shall be equal, age shall confer precedence.

SEC. 3. The Secretaries shall keep the minutes of the proceedings of all meetings, notify officers, etc., of their appointments, and the duties required of them, sign diplomas, and certify to all official acts requiring the same, receive the signatures and initiation fee of newly elected members, and do such other business as shall be required, or as the Society may, from time to time, direct in their department.

SEC. 4. The Treasurer shall receive all moneys due to the Society, and pay all bills indorsed by the Finance Committee, and countersigned by the President, keeping correct accounts of the same, and making a full and detailed report at the annual meeting in June.

SEC. 5. The Librarian shall have charge of all books, manuscripts, instruments, preparations, and other scientific property belonging to the Society; shall keep a catalogue of the same, in the usual manner, and report upon the condition of his department to the annual meeting in June.

ARTICLE III.—STANDING COMMITTEES.

SEC. 1. Standing Committees shall keep regular minutes of their proceedings, and furnish an authenticated copy to be deposited with the Librarian.

SEC. 2. It shall be the duty of the Committee on Admissions, upon receiving the names of candidates for membership, to make due inquiry, and report such as may be found worthy, to the Society, which may thereupon elect them. Should the Committee fail to report upon nominations submitted to them, any member having made such nomination may renew the same directly to the Society, in which case a vote of four-fifths of the members present shall be requisite to constitute an election.

SEC. 3. The Committee on Ethics shall hear all complaints of breach of etiquette, or violation of Medical Ethics; it shall decide all questions of Ethics submitted to it. If any member shall be charged, in writing, with any violation of the provisions of the Constitution or By Laws, or with unprofessional conduct, a copy of such charge shall be furnished to him, himself and his accuser cited to appear, when the Committee shall proceed to hear the case, reserving its decision to be reported to the Society, when its action may be affirmed by a vote of a majority of the members present.

SEC. 4. The Committee on Finance shall superintend the monetary affairs of the Society, inspect and audit all bills and the accounts of the treasury, and make such an assessment, by a *pro rata* tax upon the resident members, as may be necessary for incidental expenses; which, however, shall be subject to the approval of the Society.

SEC. 5. The Committee on Publication shall superintend the printing of such papers as may be ordered to be pub-

lished, so that they may be issued upon uniform paper, etc., under the title of "Transactions."

SEC. 6. The Executive Committee shall digest and prepare the business of each meeting, provide suitable rooms for the purposes of the Society, recommend plans for the promotion of its objects, and in all things protect and superintend the general interests of the Society.

SEC. 7. The Committee on Medical Societies shall consider the report on the organization of such Medical Associations as desire to become auxiliary to the State Medical Society, and generally take charge of this department; making, at each annual meeting, as complete report as may be practicable.

ARTICLE IV.

SEC. 1. Any resident member vacating his membership, shall thereby be divested of any right or title to any portion of the funds, or other property of the Society.

SEC. 2. Every member, on admission, shall pay the sum of $3.00 as an initiation fee, and sign the Constitution and By-Laws; nor shall he be entitled to the rights of membership until the same is paid.

SEC. 3. All vacancies of office shall be filled *ad interim* by the President.

SEC. 4. These By-Laws may be suspended by a three-fourths vote at any regular meeting, and they may be repealed or amended by a similar vote, notice of the same having been given in writing at a previous meeting.

SEC. 5. Rules of order, and all questions arising upon the same, shall be determined by parliamentary usage.

AMENDMENT TO BY-LAWS.

Resolved, That the Secretary be instructed to notify each member where his name occurs on any of the committees, who have work to perform for the next meeting, within two two weeks after adjournment.

CODE OF ETHICS

OF THE

AMERICAN MEDICAL ASSOCIATION.

ADOPTED BY THE OHIO STATE MEDICAL SOCIETY.

OF THE DUTIES OF PHYSICIANS TO THEIR PATIENTS, AND OF THE OBLIGATIONS OF PATIENTS TO THEIR PHYSICIANS.

ART. I.—*Duties of Physicians to their Patients.*

SEC. 1. A physician should not only be ever ready to obey the calls of the sick, but his mind ought also to be imbued with the greatness of his mission, and the responsibility he habitually incurs in its discharge. These obligations are the more deep and enduring, because there is no tribunal other than his own conscienc to adjudge penalties for carelessness or neglect. Physicians should, therefore, minister to the sick with due impression of the importance of their office; reflecting that the ease, the health, and the lives of those committed to their charge, depend on their skill, attention, and fidelity. They should study, also, in their deportment, so to unite *tenderness* with *firmness*, and *condescension* with *authority*, as to inspire the minds of their patients with gratitude, respect, and confidence.

SEC. 2. Every case committed to the charge of a physician should be treated with attention, steadiness, and humanity. Reasonable indulgence should be granted to the mental imbecility and caprices of the sick. Secrecy and delicacy, when required by peculiar circumstances, should be strictly observed; and the familiar and confidential inter-

course to which physicians are admitted in their professional visits, should be used with discretion, and with the most scrupulous regard to fidelity and honor. The obligation of secrecy extends beyond the period of professional services; none of the privacies of personal and domestic life, no infirmity of disposition or flaw of character observed during professional attendance, should ever be divulged by the physician, except when he is imperatively required to do so. The force and necessity of this obligation are indeed so great, that the professional men have, under certain circumstances, been protected in their observance of secrecy by courts of justice.

SEC. 3. Frequent visits to the sick are in general requisite, since they enable the physician to arrive at a more perfect knowledge of the disease, to meet promptly every change which may occur, and also tend to preserve the confidence of the patient. But unnecessary visits are to be avoided, as they give useless anxiety to the patient, tend to diminish the authority of the physician, and render him liable to be suspected of interested motives.

SEC. 4. A physician should not be forward to make gloomy prognostications, because they savor of empiricism, by magnifying the importance of his services in the treatment or cure of disease. But he should not fail, on proper occasions, to give to the friends of the patient timely notice of danger when it really occurs; and even to the patient himself, if absolutely necessary. This office, however, is so peculiarly alarming when executed by him, that it ought to be declined whenever it can be assigned to any other person of sufficient judgment and delicacy. For the physician should be the minister of hope and comfort to the sick; that, by such cordials to the drooping spirit, he may smooth the bed of death, revive expiring life, and counteract the depressing influence of those maladies which often disturb the tranquility of the most resigned in their last moments. The life of a sick person can be shortened not only by the acts, but also by the words or the manner of a physician. It is, there-

fore, a sacred duty to guard himself carefully in this respect, and to avoid all things which have a tendency to discourage the patient and to depress his spirits.

SEC. 5. A physician ought not to abandon a patient because the case is deemed incurable; for his attendance may continue to be highly useful to the patient, and comforting to the relatives around him, even in the last period of a fatal malady, by alleviating pains and other symptoms, and by soothing mental anguish. To decline attendance, under such circumstances, would be sacrificing to fanciful delicacy and mistaken liberality that moral duty which is independent of and far superior to all pecuniary consideration.

SEC. 6. Consultations should be promoted in difficult or protracted cases, as they give rise to confidence, energy, and more enlarged views in practice.

SEC. 7. The opportunity which a physician not unfrequently enjoys of promoting and strengthening the good resolutions of his patients, suffering under the consequences, of vicious conduct, ought never to be neglected. His counsels, or even remonstrances, will give satisfaction, not offense if they are proffered with politeness, and evince a genuine love of virtue, accompanied by a sincere interest in the welfare of the person to whom they are addressed.

ART. II.—*Obligations of Patients to their Physicians.*

SEC. 1. The members of the Medical Profession, upon whom are enjoined the performance of so many important and arduous duties toward the community, and who are required to make so many sacrifices of comfort, ease, and health, for the welfare of those who avail themselves of their services, certainly have a right to expect and require that their patients should entertain a just sense of the duties which they owe to their medical attendants.

SEC. 2. The first duty of a patient is, to select as his medical adviser one who has received a regular professional education. In no trade or occupation do mankind rely on the skill of an untaught artist; and in medicine, confessedly the

most difficult and intricate of the sciences, the world ought not to suppose that knowledge is intuitive.

SEC. 3. Patients should prefer a physician whose habits of life are regular, and who is not devoted to company, pleasure, or to any pursuit incompatible with his professional obligations. A patient should also confide the care of himself and family, as much as possible, to one physician; for a medical man who has become acquainted with the peculiarities of constitution, habits, and predispositions of those he attends, is more likely to be successful in his treatment than one who does not possess that knowledge.

A patient who has thus selected his physician, should always apply for advice to what may appear to him trivial cases, for the most fatal results often supervene on the slightest accidents. It is of still more importance that he should apply for assistance in the forming stage of violent diseases; it is to a neglect of this precept that medicine owes much of the uncertainty and imperfection with which it has been reproached.

SEC. 4. Patients should faithfully and unreservedly communicate to their physician the supposed cause of their disease. This is the more important, as many diseases of a mental origin simulate those depending on external causes, and yet are only to be cured by ministering to the mind diseased. A patient should never be afraid of thus making his physician his friend and adviser; he should always bear in mind that a medical man is under the strongest obligations of secrecy. Even the female sex should never allow feelings of shame or delicacy to prevent their disclosing the seat, symptoms and causes of complaints peculiar to them. However commendable a modest reserve may be in the common occurrence of life, its strict observance in medicine is often attended with the most serious consequences, and a patient may sink under a most painful and loathsome disease, which might have been readily prevented had timely intimation been given to the physician.

SEC. 5. A patient should never weary his physician with a tedious detail of events or matters not appertaining to dis-

ease. Even as relates to his actual symptoms, he will convey much more real information by giving clear answers to interrogatories, than by the most minute account of his own framing. Neither should he obtrude upon his physician the details of his business, nor the history of his family concerns.

SEC. 6. The obedience of a patient to the prescriptions of his physician should be prompt and implicit. He should never permit his own crude opinions as to their fitness, to influence his attention to them. A failure in one particular may render an otherwise judicious treatment dangerous, and even fatal. This remark is equally applicable to diet, drink and exercise. As patients become convalescent, they are very apt to suppose that the rules prescribed for them may be disregarded, and the consequence, but too often, is a relapse. Patients should never allow themselves to be persuaded to take any medicine whatever, that may be recommended to them by the self-constituted doctors and doctresses, who are so frequently met with, and who pretend to possess infallible remedies for the cure of every disease. However simple some of their prescriptions may appear to be, it often happens that they are productive of much mischief, and in all cases they are injurious, by contravening the plan of treatment adopted by the physician.

SEC. 7. A patient should, if possible, avoid even the *friendly visits of a physician* who is not attending him; and when he does receive them he should never converse on the subject of his disease, as an observation may be made, without any intention of interference, which may destroy his confidence in the course he is pursuing, and induce him to neglect the directions prescribed to him. A patient should never send for a consulting physician without the express consent of his own medical attendant. It is of great importance that physicians should act in concert; for, although their modes of treatment may be attended with equal success when employed singly, yet conjointly they are very likely to be productive of disastrous results.

SEC. 8. When a patient wishes to dismiss his physician,

justice and common courtesy require that he should declare his reasons for so doing.

SEC. 9. Patients should always, when practicable, send for their physican in the morning, before his usual hour of going out; for, by being early aware of the visits he has to pay during the day, the physician is able to apportion his time in such a manner as to prevent an interference of engagements. Patients should also avoid calling on their medical adviser unnecessarily during the hours devoted to meals or sleep. They should always be in readiness to receive the visits of their physicians, as the detention of a few minutes is often of serious inconvenience to him.

SEC. 10. A patient should, after his recovery, entertain a just and enduring sense of the value of the services rendered him by his physician; for these are of such a character, that no pecuniary acknowledgment can repay or cancel them.

OF THE DUTIES OF PHYSICIANS TO EACH OTHER AND TO THE PROFESSION AT LARGE.

ART. I.—*Duties for the Support of Professional Character.*

SEC. 1. Every individual, on entering the profession, as he becomes thereby entitled to all its privileges and immunities, incurs an obligation to exert his best abilities to maintain its dignity and honor, to exalt its standing, and to extend the bounds of its usefulness. He should, therefore, observe strictly such laws as are instituted for the government of its members; should avoid all contumelious and sarcastic remarks relative to the Faculty, as a body; and while, by unwearied diligence, he resorts to every honorable means of enriching the science, he should entertain a due respect for his seniors, who have, by their labors, brought it to the elevated condition in which he finds it.

SEC. 2. There is no profession, from the members of which greater purity of character and a higher standard of moral excellence are required, than the medical; and to attain such

eminence, it is a duty every physician owes alike to his profession and his patients. It is due to the latter, as without it he can not command their respect and confidence; and to both, because no scientific attainments can compensate for want of correct and moral principles. It is also incumbent upon the Faculty to be temperate in all things, for the practice of physic requires the unremitting exercise of a clear and vigorous understanding; and, on emergencies, for which no professional man should be unprepared, a steady hand, an acute eye, and an unclouded head may be essential to the well-being, and even to the life, of a fellow creature.

SEC. 3. It is derogatory to the dignity of the profession to resort to public advertisements, or private cards, or handbills, inviting the attention of individuals affected with particular diseases, publicly offering advice and medicine to the poor gratis, or promising radical cures; or to publish cases and operations in the daily prints, or suffer such publications to be made; to invite laymen to be present at operations, to boast of cures and remedies, to adduce certificates of skill and success, or to perform any other similar acts. These are the ordinary practices of empirics, and are highly reprehensible in a regular physician.

SEC. 4. Equally derogatory to professional character is it for a physician to hold a patent for any surgical instrument or medicine; or to dispense a secret *nostrum*, whether it be the composition or exclusive property of himself or of others. For if such nostrums be of real efficacy, any concealment regarding it is inconsistent with beneficence and professional liberality; and if mystery alone give it value and importance, such craft implies either disgraceful ignorance or fraudulent avarice. It is also reprehensible for physicians to give certificates attesting the efficacy of patent or secret medicines, or in any way to promote the use of them.

ART. II.—*Professional Services of Physicians to Each Other.*

SEC. 1. All practitioners of medicine, their wives, and their children while under the paternal care, are entitled to

the gratuitous services of any one or more of the Faculty residing near them, whose assistance may be desired. A physician afflicted with disease is usually an incompeten judge of his own case; and the natural anxiety and solicitude which he experiences at the sickness of a wife, a child, or any one who, by the ties of consanguinity, is rendered peculiarly clear to him, tend to obscure his judgment and produce timidity and irresolution in his practice. Under such circumstances, medical men are peculiarly dependent upon each other, and kind offices and professional aid should always be cheerfully and gratuitously afforded. Visits ought not, however, to be obtruded officiously; as such unasked civility may give rise to embarrassment, or interfere with that choice on which confidence depends. But, if a distant member of the Faculty, whose circumstances are affluent, request attendance, and an honorarium be offered, it should not be declined; for no pecuniary obligation ought to be imposed, which the party receiving it would wish not to incur.

ART. III.—*Of the Duties of Physicians as respects Vicarious Offices.*

SEC. 1. The affairs of life, the pursuit of health, and the various accidents and contingencies to which a medical man is peculiarly exposed, sometimes require him temporarily to withdraw from his duties to his patients, and to request some of his professional brethren to officiate for him. Compliance with this request is an act of courtesy, which should always be performed with the utmost consideration for the interest and character of the family physician, and when exercised for a short period, all the pecuniary obligations for such service should be awarded to him. But if a member of the profession neglect his business in quest of pleasure and amusement, he can not be considered as entitled to the advantages of the frequent and long continued exercise of this fraternal courtesy, without awarding to the physician who officiates the fees arising from the discharge of his professional duties.

In obstetrical and important surgical cases, which give

rise to unusual fatigue, anxiety, and responsibility, it is just that the fees accruing therefrom should be awarded to the physician who officiates.

ART. IV.—*Of the Duties of Physicians in regard to Consultations.*

SEC. 1. A regular medical education furnishes the only presumptive evidence of professional abilities and acquirements, and ought to be the only acknowledged right of an individual to the exercise and honors of his profession. Nevertheless, as in consultations the good of the patient is the sole object in view, and this is often dependent on personal confidence, no intelligent regular practitioner, who has a license to practice from some medical board of known and acknowledged respectability, recognized by this Association, and who is in good moral and professional standing in the place in which he resides, should be fastidiously excluded from fellowship, or his aid refused in consultation, when it is requested by the patient. But no one can be considered as a regular practitioner or a fit associate in consultation, whose practice is based on an exclusive dogma, to the rejection of the accumulated experience of the profession, and of the aids actually furnished by anatomy, physiology, pathology, and organic chemistry.

SEC. 2. In consultations, no rivalship or jealousy should be indulged; candor, probity, and all due respect should be exercised toward the physician having charge of the case.

SEC. 3. In consultations, the attending physician should be the first to propose the necessary questions to the sick; after which the consulting physician should have the opportunity to make such further inquiries of the patient as may be necessary to satisfy him of the true character of the case. Both physicians should then retire to a private place for deliberation; and the one first in attendance should communicate the directions agreed upon to the patient or his friends, as well as any opinions which it may be thought proper to express. But no statement or discussion of it should take place

before the patient or his friends, except in the presence of all the Faculty attending, and by their common consent; and no *opinions or prognostications* should be delivered, which are not the result of previous deliberation and concurrence.

SEC. 4. In consultations, the physician in attendance should deliver his opinion first; and when there are several consulting, they should deliver their opinions in the order in which they have been called in. No decision, however, should restrain the attending physician from making such variations in the mode of treatment, as any subsequent unexpected change in the character of the case may demand. But such variation, and the reasons for it, ought to be carefully detailed at the next meeting in consultation. The same privilege belongs also to the consulting physician if he is sent for in an emergency, when the regular attendant is out of the way, and similar explanations must be made by him at the next consultation.

SEC. 5. The utmost punctuality should be observed in the visits of physicians when they are to hold consultation together, and this is generally practicable, for society has been considerate enough to allow the plea of a professional engagement to take precedence of all others, and to be an ample reason for the relinquishment of any present occupation. But, as professional engagements may sometimes interfere, and delay one of the parties, the physician who first arrives should wait for his associate a reasonable period, after which the consultation should be considered as postponed to a new appointment. If it be the attending physician who is present, he will of course see the patient and prescribe; but if it be the consulting one, he should retire, except in case of emergency, or when he has been called from a considerable distance, in which latter case he may examine the patient, and give his opinion in *writing* and *under seal*, to be delivered to his associate.

SEC. 6. In consultations, theoretical discussions should be avoided, as occasioning perplexity and loss of time. For there may be much diversity of opinion concerning specula-

tive points, with perfect agreement in those modes of practice which are founded, not on hypothesis, but on experience and observation.

SEC. 7. All discussions in consultation should be held as secret and confidential. Neither by words nor manner should any of the parties to a consultation assert or insinuate that any part of the treatment pursued did not receive his assent. The responsibility must be equally divided between the medical attendants; they must equally share the credit of success as well as the blame of failure.

SEC. 8. Should an irreconcilable diversity of opinion occur when several physicians are called upon to consult together, the opinion of the majority should be considered as decisive; but if the numbers be equal on each side, then the decision should rest with the attending physician. It may, moreover, sometimes, happen that two physicians can not agree in their views of the nature of a case, and the treatment to be pursued. This is a circumstance much to be deplored, and should always be avoided, if possible, by mutual concessions, as far as they can be justified by a conscientious regard for the dictates of judgment. But in the event of its occurrence, a third physician should, if practicable, be called to act as umpire; and, if circumstances prevent the adoption of this course, it must be left to the patient to select the physician in whom he is most willing to confide. But, as every physician relies upon the rectitude of his judgment, he should, when left in the minority, politely and consistently retire from any further deliberation in the consultation, or participation in the management of the case.

SEC. 9. As circumstances sometimes occur to render a *special consultation* desirable, when the continued attendance of physicians might be objectionable to the patient, the member of the Faculty whose assistance is required in such cases should sedulously guard against all future unsolicited attendance. As such consultations require an extraordinary portion both of time and attention, at least a double honorarium may be reasonably expected.

SEC. 10. A physician who is called upon to consult, should observe the most honorable and scrupulous regard for the character and standing of the practitioner in attendance; the practice of the latter, if necessary, should be justified as far as it can be, consistently with a conscientious regard for truth, and no hint or insinuation should be thrown out which could impair the confidence reposed in him, or affect his reputation. The consulting physician should also carefully refrain from any of those extraordinary attentions or assiduities, which are too often practiced by the dishonest for the base purpose of gaining applause, or ingratiating themselves into the favor of families and individuals.

ART. V.—*Duties of Physicians in Cases of Interference.*

SEC. 1. Medicine is a liberal profession, and those admitted into its ranks should found their expectations of practice upon the extent of their qualifications, not on intrigue or artifice.

SEC. 2. A physician, in his intercourse with a patient under the care of another practitioner, should observe the strictest caution and reserve. No meddling inquiries should be made; no disingenuous hints given relative to the nature and treatment of his disorder; nor any course of conduct pursued that may directly or indirectly tend to diminish the trust reposed in the physician employed.

SEC. 3. The same circumspection and reserve should be observed when, from motives of business or friendship, a physician is prompted to visit an individual who is under the direction of another practitioner. Indeed, such visits should be avoided, except under peculiar circumstances; and when they are made, no particular inquiries should be instituted relative to the nature of the disease, or the remedies employed, but the topics of conversation should be as foreign to the case as circumstances will admit.

SEC. 4. A physician ought not to take charge of or prescribe for a patient who has recently been under the care of another member of the Faculty in the same illness, except in

cases of sudden emergency, or in consultation with the physician previously in attendance, or when the latter has relinquished the case, or been regularly notified that his services are no longer desired. Under such circumstances, no unjust and illiberal insinuations should be thrown out in relation to the conduct or practice previously pursued, which should be justified as far as candor and regard for truth and probity will permit; for it often happens that patients become dissatisfied when they do not experience immediate relief, and, as many diseases are naturally protracted, the want of success, in the first stage of treatment, affords no evidence of a lack of professional knowledge and skill.

SEC. 5. When a physician is called to an urgent case, because the family attendant is not at hand, he ought, unless his assistance in consultation be desired, to resign the care of the patient to the latter immediately on his arrival.

SEC. 6. It often happens, in cases of sudden illness or of recent accidents and injuries, owing to the alarm and anxiety of friends, that a number of physicians are simultaneously sent for. Under these circumstances, courtesy should assign the patient to the first who arrives, who should select from those present any additional assistance that he may deem necessary. In all such cases, however, the practitioner who officiates should request the family physician, if there be one, to be called, and, unless his further attendance be requested, should resign the case to the latter on his arrival.

SEC. 7. When a physician is called to the patient of another practitioner, in consequence of the sickness or absence of the latter, he ought, on the return or recovery of the regular attendant, and with the consent of the patient, to surrender the case.

[The expression "patient of another practitioner" is understood to mean a patient who may have been under the charge of another practioner at the time of the attack of sickness, or departure from home of the latter, or who may have called for his attendance during his absence or sickness, or in any

other manner given it to be understood that he regarded the said physician as his regular medical attendant.]

SEC. 8. A physician, when visiting a sick person in the country, may be desired to see a neighboring patient who is under the regular direction of another physician, in consequence of some sudden change or aggravation of symptoms. The conduct to be pursued on such an occasion is to give advice adapted to present circumstances; to interfere no further than is absolutely necessary with the general plan of treatment; to assume no future direction, unless it be expressly desired; and, in this last case, to request an immediate consultation with the practitioner previously employed.

SEC. 9 A wealthy physician should not give advice *gratis* to the affluent; because his doing so is an injury to his professional brethren. The office of a physician can never be supported as an exclusively beneficent one; and it is defrauding, in some degree, the common funds for its support, when fees are dispensed with, which might justly be claimed.

SEC. 10. When a physician who has been engaged to attend a case of midwifery is absent, and another is sent for, if delivery is accomplished during the attendance of the latter, he is entitled to the fee, but should resign the patient to the practitioner first engaged.

ART. VI.—*Of Differences between Physicians.*

SEC. 1. Diversity of opinion and opposition of interest may, in the medical, as in other professions, sometimes occasion controversy and even contention. Whenever such cases unfortunately occur, and can not be immediately terminated, they should be referred to the arbitration of a sufficient number of physicians, or a *court-medical*, or, where both parties are members of the Medical Society of their county, to the Censors.

SEC. 2. As peculiar reserve must be maintained by physicians toward the public, in regard to professional matters, and as there exists numerous points in medical ethics and etiquette through which the feelings of medical men may be

painfully assailed in their intercourse with each other, and which can not be understood or apprehended by general society, neither the subject-matter of such differences nor the adjudication of the arbitrators should be made public, as publicity in a case of this nature may be personally injurious to the individuals concerned, and can hardly fail to bring discredit on the Faculty.

ART. VII.—*Of Pecuniary Acknowledgment.*

Some general rules should be adopted by the Faculty, in every town or district, relative to *pecuniary acknowledgments* from their patients; and it should be deemed a point of honor to adhere to these rules with as much uniformity as varying circumstances will admit.

OF THE DUTIES OF THE PROFESSION TO THE PUBLIC, AND OF THE OBLIGATIONS OF THE PUBLIC TO THE PROFESSION.

ART. I.—*Duties of the Profession to the Public.*

SEC. 1. As good citizens, it is the duty of physicians to be ever vigilant for the welfare of the community, and to bear their part in sustaining its institutions and burdens; they should also be ever ready to give counsel to the public in relation to matters especially appertaining to their profession, as on subjects of medical police, public hygiene, and legal medicine. It is their province to enlighten the public in regard to quarantine regulations—the location, arrangement, and dietaries of hospitals, asylums, schools, prisons, and similar institutions—in relation to the medical police of towns, of drainage, ventilation, etc.—and in regard to measures for the prevention of epidemic and contagious diseases; and when pestilence prevails, it is their duty to face the danger, and to continue their labors for the alleviation of the suffering, even at the jeopardy of their own lives.

SEC. 2. Medical men should also be always ready, when called on by the legally constituted authorities, to enlighten

coroners' inquests and courts of justice, on subjects strictly medical; such as involve questions relating to sanity, legitimacy, murder by poisons or other violent means, and in regard to the various other subjects embraced in the science of Medical Jurisprudence. But in these cases, and especially where they are required to make a *post-mortem* examination, it is just, in consequence of the time, labor, and skill required, and the responsibility and risk they incur, that the public should award them a proper honorium.

SEC. 3. There is no profession, by the members of which eleemosynary services are more liberally dispensed than the medical, but justice requires that some limits should be placed to the performance of such good offices. Poverty, professional brotherhood, and certain of the public duties referred to in the first section of this article, should always be recognized as presenting valid claims for gratuitous services; but neither institutions endowed by the public or by rich individuals, societies for mutual benefit, for the insurance of lives or for analagous purposes, nor any profession or occupation, can be admitted to possess such privilege. Nor can it be justly expected of physicians to furnish certificates of inability to serve on juries, to perform militia duty, or to testify to the state of health of persons wishing to insure their lives, obtain pensions, or the like, without pecuniary acknowledgment. But to individuals of indigent circumstances such professional services should always be cheerfully and freely accorded.

SEC. 4. It is the duty of physicians, who are frequent witnesses of the enormities committed by quackery, and the injury of health and even destruction of life caused by the use of quack medicines, to enlighten the public on these subjects, to expose the injuries sustained by the unwary from the devices and pretensions of artful empirics and imposters. Physicians ought to use all the influence which they may possess, as Professors in Colleges of Pharmacy, and by exercising their option in regard to the shops to which their prescriptions shall be sent, to discourage druggists and apothe-

caries from vending quack or secret medicines, or from being in any way engaged in their manufacture and sale.

ART. II.—*Obligations of the Public to Physicians.*

The benefits accruing to the public, directly and indirectly, from the active and unwearied beneficence of the profession, are so numerous and important, that physicians are justly entitled to the utmost consideration and respect from the community. The public ought likewise to entertain a just appreciation of medical qualifications; to make a proper discrimination between true sciences and the assumptions of ignorance and empiricism; to afford every encouragement and facility for the acquisition of medical education; and no longer to allow the statute books to exhibit the anomaly of exacting knowledge from physicians, under a liability to heavy penalties, and of making them obnoxious to punishment for resorting to the only means of obtaining it.

LIST OF MEMBERS

OF

OHIO STATE MEDICAL SOCIETY,

With Post-office Address, date of Admission, and date of Death.

Name.	Post-office Address.	Admitted.	Died.
Ackley, H. A.*	Cleveland	1850	185
Allen, Peter*	Kinsman	1850	.....
Agard, Aurelius H.	Sandusky	1853	.....
Amos, C. E*	Cleveland	1852	.....
Angel, E *	Akron	1852	.....
Applegate, Fred. C	Windham	1859	.....
Almy, S. C	Cincinnati	1862	.....
Armstrong, T. H	Powhatan Point	1862	.....
Allen, D. B	West Liberty	1865	.....
Anderson, W. S	Newtonville	1867	.....
Aiken, P. J	Newark	1869	.....
Alcorn, A. W	Ravenna	1870	.....
Allen, Dudley	Oberlin	1870	.....
Ball, A	Zanesville	1848	.....
Baker, Timothy	Wooster	1851	.....
Baker, A. H.*	Cincinnati	1846	1865
Beach, C. H	Wellington	1868	.....
Belding, Alvin	Ravenna	1853	.....
Beaugrand, Pierce	Fremont	1853	.....
Bigelow, J. M	Lancaster	1846	.....
Boerstler, G. W	Lancaster	1846	.....
Boalse, A. N*	Lockburn	1848	.....
Boyle, C. E*	Columbus	1851	1870
Bonner, Stephen	Cincinnati	1847	.....
Brown, E. T*	Logan	1849	.....
Bricker, W. R	Shelby	1848	.....
Bronson, James	Newton Falls	1852	.....
Buckner, Philip J*	Cincinnati	1850	.....
Butterfield, John*	Columbus	1846	1847
Bing, J. P	Pomeroy	1851	.....
Brown, J. M	Cincinnati	1851	.....
Brinkerhoof, D. H	Willoughby	1853	.....
Buckner, Wm*	Hamilton	1853	.....
Burr, J. N	Mt. Vernon	1853	.....
Brooks, J. H	Brownsville	1854	.....
Brennan, Thomas*	Dayton	1855	1858
Bell, A. E	Zanesville	1855	.....

* Deceased.

Name.	Post-office Address.	Admitted.	Died.
Buckingham, E. M	Springfield	1855	
Brown, B. S	Bellefontaine	1855	
Brellen, Joseph	Grove City	1856	
Boyd, G. M	Xenia	1857	
Battles, W. S	Shreve	1858	
Brook, Geo. W.	Ellsworth	1858	
Bertolett, D. H	Letonia	1858	
Baker, Norman	Lucas	1858	
Bridge, W. W.*	Marion	1859	1864
Brayton, A	Cary	1859	
Beach, J. N	West Jefferson	1859	
Brenton, J. L	North Georgetown	1860	
Blizzard, S. R	Huntsville	1860	
Blackman, G. C	Cincinnati	1860	
Beeman, P	Iola, Kansas	1861	
Brooks, M. L	Cleveland	1861	
Bowers, E. D	Columbus	1861	
Beverly, P. F	Jerome	1862	
Beach, A. J	Belleville	1863	
Brown, J. C	Urbana	1863	
Buckner, J. H	Cincinnati	1863	
Bunce, Wm	Oberlin	1864	
Ballinger, Wm. J	Pleasant Valley	1864	
Brown, Wm. A	McConnellsville	1865	
Baggs, James	Ontario	1866	
Black, J. R	Newark	1867	
Besse, H	Delaware	1868	
Berlin, C	Wapakonetta	1868	
Blymer, A	Delaware	1868	
Blesch, P. E	Columbus	1869	
Bartholow, Robert	Cincinnati	1869	
Bennet, John	Cleveland	1869	
Beardsley, C. E	Ottawa	1869	
Bertolett, W. J	Shreve	1869	
Brown, J. A	Degraff	1869	
Bracken, W. C.	Jersey	1869	
Butler, G. W	Alton	1869	
Brainard, A. C	Olmstead Falls	1870	
Bruce, A. G			
Bramble. D. D	Cincinnati	1870	
Boerstler, G. W., jr	Lancaster	1870	
Bertolett, J. B	Letonia	1870	
Bertolett, H. A	Washingtonville	1870	
Butler, Geo. O	Cleveland	1870	
Ballard, H. D	Findlay	1870	
Brainard, H. C	Cleveland	1870	
Bennet, P. C	Freedom	1870	
Bishop, S. P	Delta	1870	
Creeme, P. M	Eaton	1847	
Conklin, H. S	Sidney	1849	
Cook, F.*	Atwater	1853	1857
Cary, Abel	Salem	1852	

* Deceased.

Name.	Post-office Address.	Admitted.	Died.
Chamberlin, E. K *	Cincinnati	1847	1847
Cotton, J. D	Marietta	1852	
Conuer, P. S*	Cincinnati	1853	
Coons, Israel A	Middletown	1853	
Cox, D. A*	New Paris	1846	
Crook, James M*	Dayton	1853	
Carroll, Thomas	Cincinnati	1854	
Culbertson, Howard	Zanesville	1855	
Campbell, John	Uniontown	1855	
Caldwell, Joseph*	Huron	1857	1866
Cushing, H. K	Cleveland	1857	
Caruthers, John A	Kilbourne	1859	
Cadwallader, Rowland	Findlay	1862	
Cook, Charles C*	Youngstown	1862	1863
Clark, Henry P	Ashland	1862	
Cutler, James	Bellepoint	1864	
Combs, J. S.	Owensville	1865	
Clason, Thos. S	Bellefontaine	1865	
Carter, J. O	Marion	1866	
Corson, John	Middletown, Butler co.	1866	
Constant, W. S	Delaware	1866	
Coleman, Horace	Troy	1867	
Chessney, W. M	Kenton	1867	
Courtwright, G. S	Lithopolis	1867	
Conner, P. S	Cincinnati	1868	
Conklin, W. J	Dayton	1868	
Clark, John H	Mechanicsburg	1869	
Chase, B. S	Akron	1870	
Cassat, M	Cincinnati	1870	
Cutler, E. J	Cleveland	1870	
Danna, M*		1849	
Delemater, John*	Cleveland	1850	1867
Dorsey, G. V	Piqua	1850	
Denig, R. M	Columbus	1851	
Dolman, Wm *	Cleveland	1852	
Dawson, W. W	Cincinnati	1853	
Davis, John	Dayton	1853	
Dawson, John*	Columbus	1851	1866
Davis, John	Cincinnati	1854	
Donohoe, H. J	Sandusky	1854	
Dunlap, Alexander	Springfield	1854	
Dodge, J. S	Cincinnati	1854	
Dean, W. F*	Milan	1857	in army
Darwin, Henry W	Gettysburg	1859	
Drake, J. L	Lebanon	1859	
Drury, Wm. H	Columbus	1859	
Dalton, N	Logan	1860	
Davis, Wm. B	Cincinnati	1865	
Dillon, Horace D	Warren	1866	
Dunlap, A. S	Springfield	1868	
Daugherty, G. A	Cincinnati	1868	
Dunlap, C. W	Springfield	1869	

* Deceased.

Name.	Post-office Address.	Admitted.	Died.
Dalby, Isaac N.	Cleveland	1870	------
Ells, G. E.*	Lithopolis	1849	1867
Estep, William	Lloydsville	1852	------
Edwards, J. D.	Xenia	1867	------
Ellis, A. N.	Lockland	1868	------
Eckman, Hiram	Tuscarawas	1869	------
Everhard, N. S.	Wadsworth	1870	------
Ebright, L. S.	Middlebury	1870	------
Foulke, L. W.	Chillicothe	1850	------
Fyffe, E. P.*	Urbana	1851	1867
Firestone, L.	Wooster	1852	------
Fuller, S. W.	West Liberty	1853	------
Foote, H. E.	Cincinnati	1854	------
Falconer, Cyrus	Hamilton	1854	------
Foster, Nathaniel	Cincinnati	1854	------
Farrington, S. H.	Ashtabula	1856	------
Finch, S. F.	Green Springs	1857	------
Fries, George*	Cleveland	1862	1866
Follet, Alfred	Granville	------	------
Fuller, A. B.	Loudonville	1868	------
French, C. M.	Portsmouth	1869	------
Firestone, J. L.	Salem	1870	------
Gay, N.	Columbus	1848	------
Gard, B. F.*	Columbus	1847	1849
Gillett, Bartley	Springfield	1849	------
Gaston, E.*	Morristown	1849	1868
Gordon, T. W.	Georgetown	1849	------
Goble, P.	Worthington	1849	------
Gailey, J. D.*	Marion	1851	------
Gille, L. C. C.*	Westville	1853	------
Gerwe, F. A. J.	Cincinnati	1854	------
Gabriel, R. W.*	Dublin	1854	1860
Gotwald, A. G.	Dayton	1854	------
Green, M.*	Cambridge	1855	1856
Gilcrist, R. S.	Degraff	1856	------
Gabriel, J. F.	Piqua	1856	------
Gundry, Richard	Dayton	1856	------
Guerin, Z. F.	Westerville	1856	------
Galpin, Loman	Milan	1857	------
Gans, S*	Cincinnati	1861	1864
Gonsaulis, C.	Sparta	1863	------
Griswold, Wayne	Circleville	1866	------
Gray, S. S.	Piqua	1867	------
Goldrick, Wm.	Delaware	1868	------
Guyttard, F.	New Bedford	1870	------
Gawne, A. J.	Sandusky	1870	------
Guthrie, James W.	Wooster	1870	------
Gould, D. T.	Cleveland	1870	------
Hills, R.	------	1846	------
Howard, R. L.*	Columbus	1846	------
Helmick, J.	Harrisburg	1849	------
Hornbeck, R.*	New Carlisle	1849	------

* Deceased.

Name.	Post-office Address.	Admitted.	Died.
Hurxthall, F. T.*	Massillon	1849	1865
Huestis, Isaac	Chesterhill	1849	
Harley, L. G	Dalton	1853	
Henderson, J. P	Newville	1850	
Hamilton, J. W	Columbus	1849	
Howard, E. W	Akron	1852	
Hopkins, Rudd C.*	Newburg	1852	In army
Hildreth, C. C	Zanesville	1853	
Helmick, G. W.*	Harrisburg	1848	
Hoagland, C. N	Troy	1853	
Holston, J. G. F	Zanesville	1850	
Haines, Job*	Dayton	1853	1860
Hart, B. F	Marietta	1854	
Haines, V.*	Cambridge	1853	1865
Henderson, D. W	Waynesville	1856	
Hubbard, J. C	Ashtabula	1856	
Harmon, Julian	Warren	1857	
Hitchcock, Jas	Port Clinton	1857	
Hughes, J. W.*	Berlin Center	1858	1869
Hall, W. E	Fayetteville	1859	
Houston, J. T	Jamestown	1859	
Hill, E. L	Oxford	1857	
Hagett, J. P.*	Eaton	1861	1862
Hays, Wm	Melfordton	1862	
Hyatt, E. H.	Delaware	1862	
Hamil, J. J	Newark	1863	
Henderson, R. A	Upper Sandusky	1865	
Herrick, H. J	Cleveland	1865	
Hadley, Edwin	Richmond	1865	
Hill, N. S	Newville	1866	
Hunt, Chas	Wooster	1866	
Hopkins, D. O	St. Paris	1866	
Hazzard, J. S. R	Springfield	1867	
Hill, H	West Alexandria	1867	
Hendrickson, Hugh	Lewis Center	1868	
Hunt, A. H	Blackleyville	1868	
Harrison, Eugene	Napoleon	1869	
Higgins, C. W	Big Plain	1869	
Halderman, D	Columbus	1869	
Hough, J. B	Ridgeville	1869	
Heuston, R. C	Oxford	1868	
Heighway, A. E	Cincinnati	1870	
Hurd, A	Findlay	1870	
Houghton, J. W	Wellington	1870	
Hobson, J. F		1870	
Judkins, J. P.*	Cincinnati	1846	1867
Johnson, Wm.*	Delaware	1850	
Judkins, Wm.*	Cincinnati	1847	1861
Jones, T. W	South Bloomfield	1847	
Junkens, M. W	Bellair	1859	
Joseph, A P	Fairmount	1862	
Jones, R. E	Gomer	1863	

*Deceased.

Name.	Post-office Address.	Admitted.	Died.
Johnson, R. A	Wellsville	1864	------
Jacobs, W. C	Akron	1866	------
Jenner A. E	Crestline	1866	------
Jennings, E	Dayton	1867	------
Jones, A. B	Portsmouth	1868	------
Jones, W. H	Cleveland	1868	------
Jones, L. M	West Liberty	1869	------
Jewett, W. H	Hilliard	1869	------
Jennings, J. D	Sonora	1869	------
Jobes, J. A	Palestine	1870	------
Jewett, M	Middleburg	1870	------
Jones, J. D	Newburg	1870	------
Jones, D. J		1870	------
Jones, N. M	Cleveland	1870	------
Kirtland, J. P	Cleveland	1846	------
Kable, W. R.*	Bellebrook	1846	1859
Kreider, M. Z.*	Lancaster	1846	------
Keever, M. H	Ridgeville	1850	------
Kay, Isaac	Springfield	1853	------
Kincaid, W. P	New Richmond	1854	------
Kennedy, J. C	Batavia	1854	------
Kyle, J. G.*	Xenia	1856	1870
Kennedy, J. L.*	Batavia	1864	1866
Kinsman, D. W	Circleville	1864	------
Kelley, H. R	Galion	1868	------
Kemps, J. D	Vandalia	1868	------
Knowlton, A. P	Olmstead Falls	1870	------
Kinnaman, J. W	Ashland	1870	------
Landon, G. W. H			------
Lewis, D			------
Landon, C. P			------
Langworthy, O. B			------
Lyman, C. N			------
Lamme, W. H			------
Lane, E. S			------
Lathrop, H.*	Columbus	1846	1849
Lawson, L. M.*	Cincinnati	1853	1864
Leonard, B. B	West Liberty	1854	------
Loving, S	Columbus	1858	------
Longfellow, A. J	Fostoria	1861	------
Loller, W. B	Nashville	1864	------
Leonhard, C. S	Ravenna	1865	------
Longworth, W. N	Van Wert	1866	------
Little, J. A	Delaware	1868	------
Lord, J. M	Chesterville	1868	------
Lewis, W. C	Rushville	1869	------
Lee, E. B	Garrettsville	1870	------
Lewis, Edward C	Canal Dover	1870	------
Maris, G. W	Columbus	1848	------
Mitchell, G. F.*	Mansfield	1850	1869
Mussey, R. D.*	Cincinnati	1847	1866
Moore, W. C	Wooster	1852	------

*Deceased.

Name.	Post-office Address.	Admitted.	Died.
Millikin, Samuel*	Hamilton	1853	------
Metz, Abram	Massillon	1852	------
Moore, Jonas*	Marietta	1852	1856
Merriman, A.*	Madison	1853	1867
Mack, John	Shelby	1853	------
Martin, Joshua*	Xenia	1853	1857
Mosgrove, J. M	Urbana	1853	------
Mount, William*	Cumminsville	1853	1866
Muscroft, C. S	Cincinnati	1854	------
Marshall, N. T.*	Cincinnati	1854	------
Mendenhall, G	Cincinnati	1854	------
Mussey, W. H	Cincinnati	1854	------
Morehead, W.*	Zanesville	1855	1861
Mullen, T. J	New Richmond	1855	------
Matson, A. F.*	Logansville	1857	1867
Miller, A. C	Orrville	1858	------
Mahlman, C. H. W	Columbus	1859	------
Mounts, J. L	Morrow	1860	------
Moe, L. W	Ottawa	1860	------
Maranda, Isaac	New Carlisle	1860	------
Matchett, W. H	Greenville	1862	------
Maynard, A	Cleveland	1863	------
Mitchell, M.*	Mansfield	1863	1864
Morse, Joel	Cleveland	1863	------
Moore, William	New Lisbon	1865	------
Mitchell, George	Mansfield	1868	------
Moore, Eugene L	Moscow	1868	------
Morse, D. A	Midway	1868	------
Moore, E	Warren	1868	------
Miles, A. J	Cincinnati	1869	------
Morris, F. B	Ross	1869	------
Moore, A. C	Amelia	1869	------
Mahlman, H. A	Columbus	1869	------
Miller, Thomas V	Columbus	1869	------
Metcalf, C. T	Warren	1870	------
Miller, T. C	Cleveland	1870	------
Mouser, J. A	La Rue	1870	------
Murray, L. S	Medina	1870	------
McGuire, W. B.*	Waynesville	1850	------
McLean, R. R	Lockbourne	1848	------
McLaughlin, A. C	Tremont	1861	------
McFarland, J. A	Tiffin	1852	------
McNally, Thomas	Chillicothe	1850	------
McNeal, F. D*	Canal Dover	1853	------
McIlvain, R. R	Cincinnati	1854	------
McMears, R. R*	Sandusky City	1854	1862
McDormat, C	Dayton	1854	------
McBeth, J. C	Galion	1857	------
McCarty, Oliver	Polk P. O	1858	------
McBride, Alexander	Berea	1862	------
McConnel, C. N	Upper Sandusky	1865	------
McElwe, S	New Castle	1865	------

* Deceased.

Name.	Post-office Address.	Admitted.	Died.
McEbright, Thomas G	Akron	1866	------
McKinley, C. G	Sunbury	1866	------
McClure, James	Lee	1866	------
McClurg, John	Center Village	1866	------
McNeal, F. B	Troy	1867	------
McNeely, J. S	Dalton	1867	------
McCracken, W. A.†	Springfield	1867	1868
McCuskey, H	Batavia	1867	----
McCallough, J. G	Bealsville	1868	------
McLaughlin, R	Butler	1868	------
McGraw, Aaron	Burton	1869	------
McCardy, John	Youngstown	1869	------
McKean, Wm	Mt. Hope	1870	------
McGuire, J	Norwalk	1870	------
Norton, J. C.†	Marion	1848	------
Nicholsont, W. A	Cleveland	1853	------
Noble, David	Hillsboro	1860	------
Neal, T. L	Dayton	1863	------
Neil, Alex	Sunbury	1868	------
Noble, C. D	Oberlin	1870	------
Oliver, J. Q.†	Cincinnati	1854	------
Owen, H. W	Mt. Vernon	1862	------
Price, Jos	Randolph	1852	------
Purple, J. G.†	Brooklyn	1853	------
Peck, W. L	Columbus	1853	------
Potter, J. F.†	Cincinnati	1854	1868
Preston, J. C	Brunswick	1857	------
Pomerine, Joel	Millersburg	1858	------
Pearce, Jr. Enoch	Steubenville	1859	------
Patterson, A. V	Mansfield	1861	------
Potter, Amos	New Madison	1863	------
Pease, L. T	Williamsburg	1863	------
Pullen, G. W	Logan	1864	------
Paige, W. F	Johnstown	1864	------
Philips, H. W	Kenton	1866	------
Pearce, H. C	Urbana	1867	------
Pomeroy, O	Chardon	1869	------
Pratt, E. B	Mt. Sterling	1869	------
Pearce, L. E	Cable	1869	------
Pomerene, P. P	Berlin	1870	------
Perrin, J	Cleveland	1870	------
Pixley, Sumner	Peninsula	1870	------
Russell, J. W	Mt. Vernon	1848	------
Risinger, J. F.†	Galion	1849	1866
Robertson, Chas	McConelsville	1849	------
Reeves, L. C.†	Cincinnati	1850	1870
Reeves, W. H	Springfield	1849	------
Rogers, Robert	Springfield	1847	------
Rodman, Thomas S.†	Cleveland	1852	------
Robertson, James†	Perrysburg	1853	1854
Rigdon, L.†	Hamilton	1853	1865
Reeves, Landon	Cincinnati	1853	------

† Deceased.

Name.	Post-office Address.	Admitted.	Died.
Rogers, J. G	New Richmond	1853	
Rusk, Daniel	Malta	1855	
Reamey, T. A	Zanesville	1855	
Robinson, J. D.	Wooster	1856	
Robinson, J. N.	Medina	1856	
Robb, Andrew	Blanchester	1859	
Rodgers, J. H	Springfield	1859	
Raymond, B	Carroll	1860	
Rathbun, C.	Salem	1860	
Reeve, J. C	Dayton	1861	
Reid, J. T.†	Fairfield	1863	1864
Ralston, D. H.	Granville	1864	
Reed, C. R	Middleport	1864	
Reed, Wm	Iberia	1865	
Reed, R. C. S.	Glendale	1867	
Richie, J. H.	Ontario	1867	
Rice, J. B.	Fremont	1868	
Ropp, W. P	Delaware	1869	
Roots, W. Y.	Milford Center	1869	
Rankin, A. H.	Sandusky	1870	
Ridenour, W. T	Toledo	1870	
Russell, J. W.	Mt. Vernon	1870	
Reed, A. N.	Norwalk	1870	
Reed, A. B.	Brooklyn Village	1870	
Randall, R.	Bath	1870	
Skinner, J. S.†	Columbus	1849	
Steele, H. K	Dayton	1851	
Sachse, G. J.†	Columbus	1846	1860
Smith, S. M.	Columbus	1846	
Smith. James	Elkhorn	1850	
Smith, Edmond†		1850	1850
Seldon, O. G	Shanesville	1851	
Silver, D. H.†	Columbus	1851	1864
Stanton, Benj.†	Salem	1852	1861
Story, R.†	Cleveland	1852	1866
Smith, A. C.†	Medina	1852	1861
Shotwell, John T.†	Cincinnati	1850	
Sanders, Moses†	Norwalk	1853	
Shaedford, R. J.†	Medway	1853	1868
Sharp, W. T.	Middleburg	1853	
Smith, J. A.†	Piqua	1853	1858
Stevens, E. B	Cincinnati	1853	
Spillman, Henry†	Medina	1855	1862
Scarf, W. D	Bellefountain	1855	
Scott, W. J	Cleveland	1855	
Sheppard, W. A.	New Vienna	1856	
Sinnett, E.	Granville	1856	
Snodgrass, J. M.	Ostrander	1850	
Stevenson, A. G	Richmond	1856	
Stilwell, Thomas	Fremont	1857	
Shively, J. W.	Massillon	1858	
Schurtzer, J. V.	Massillon	1858	

† Deceased.

Name.	Post-office Address.	Admitted.	Died.
Sweney, R. L	Marion	1859	.....
Scoville, S. S	Lebanon	1859	.....
Sharpe, E. C †	Williamsburg	1859	1868
Southard, J. M	Marysville	1860	.....
Stephenson, J. H	Leesville	1860	.....
Spees, S. J	Hillsboro'	1863	.....
Smith, J. W	Wellington	1863	.....
Stamp, Jacob	Mt. Vernon	1866	.....
Sprague, James	Vienna X Roads	1866	.....
Scobey, W. E	Hamilton	1866	.....
Stansell, J. A	Forest	1866	.....
Sellers, A	Lebanon	1867	.....
Stockstill, J. W	New Carlisle	1867	.....
Stewart, J. W	Dayton	1868	.....
Shouse, B. A	Antioch	1868	.....
Shields, T. P	Watkins	1868	.....
Seaton, A. M	Midway	1869	.....
Schueller, J. B	Columbus	1869	.....
Steeley, H. G	Sidney	1869	.....
Smith, Harry	Mt. Vernon	1869	.....
Steward, S. H	Newburg	1869	.....
Shoemaker, J. W	Napoleon	1869	.....
Silver, J. G	St. Louis	1869	.....
Stanley, E	Sandusky	1870	.....
Scott, A. J	Loudonville	1870	.....
Sykes, W. H	Plymouth	1870	.....
Speece, N. V	Quincy	1870	.....
Sherman, A. M	Kent	1870	.....
Silver, D. R	Applecreek	1870	.....
Selden, Robert	Shanesville	1870	.....
Smith, D. B	Cleveland	1870	.....
Thompson, John B	Columbus	1846	.....
Thompson, M †	Mt. Vernon	1850	1867
Thompson, Robert †	Columbus	1846	1865
Tilden, D. J †	Cincinnati	1850	.....
Tullis, J. W †	Troy	1851	.....
Tappan, Benjamin †	Steubenville	1852	.....
Thompson, J. C	South Bloomfield	1848	.....
Tipton, R. H	Darbyville	1853	.....
Treon, John	Miamisburg	1853	.....
Taliaferro, William T	Cincinnati	1854	.....
Tilden, Daniel †	Sandusky	1856	1870
Turney, S. D	Circleville	1856	.....
Taggart, T. M †	Dalton	1857	1867
Thomas, K. G †	Alliance	1858	1869
Thompson, J. W †	Columbus	1860	1862
Thompson, A. W	Circleville	1862	.....
Turnbull, John	Xenia	1863	.....
Turney, Joseph	Nevada	1864	.....
Thorn, E	Yellow Springs	1867	.....
Thuston, R. C	Oxford	1868	.....
Todd, Joseph	Shreve	1868	.....

† Deceased.

Name.	Post-office Address.	Admitted.	Died.
Ticknor, E J	Lebanon	1869	
Terry, C. A	Cleveland	1870	
Underwood, A. H	London	1869	
Underwood, W. J	Akron	1869	
Vattier, J. L	Cincinnati	1850	
Van Pearse, Jas*	Columbus	1850	
Van Tuyl, D. R*	South Bend	1850	
Van Tuyl, H*	Dayton	1853	
Vanatta, E	Fultonham	1855	
Vandervort, J W	Harveysburg	1864	
White, John*		1848	
Wilson, J. F			
Wright, M. B	Cincinnati	1852	
Woodward, Chas	Cincinnati	1851	
Williams, A. S	Fostoria	1852	
Woods, D. B	Cincinnati	1852	
Wilson, Samuel	Wooster	1854	
Wilson, Albert	Sidney	1854	
Wade, D. E	Cincinnati	1854	
Williams, E	Cincinnati	1856	
Weber, G. C. E	Cleveland	1857	
Wilson, W. F	Ironton	1856	
Welsh, B. F	London	1859	
Wright, T. L	Bellefontaine	1860	
Weeks, G. R	Bloomfield	1860	
Williams, T. B	Delaware	1860	
Wallace, R*	Lewisburg	1861	1865
Wigton, A. E*	Delaware	1861	1862
Woods, J. T	Findlay	1862	
Woody, Robt	Eaton	1863	
Wilson, W. H	Greenfield	1865	
Weatherby, A. S	Cardington	1865	
Weaver, J. M	Wooster	1865	
Wirth, R	Columbus	1865	
Woodworth, M. C	Warren	1866	
White, J. H	Delaware	1866	
Wylie, A. N	Ripley	1866	
Woodruff, L	Alton	1867	
Willis, P. A	Belle Point	1868	
Waterman, H. C	Middleport	1868	
Williams, D. S	West Independence	1868	
Willis, T. A	Belle Point	1868	
Williams, A. D	Cincinnati	1868	
Wheaton, J. M	Columbus	1869	
Wagenhals, P. M	Lancaster	1869	
Wiggins, C. W	Big Blain	1869	
Watt, Wm	Kenton	1870	
Whiting, L. M	Canton	1870	
Woodbridge, T	Youngstown	1870	
Weed, Frank J	Cleveland	1870	
Waggoner, Joseph	Ravenna	1870	
Wallace, J. H	Canaan	1870	
Warren, Guy	Garrettsville	1870	

*Deceased.

HONORARY MEMBERS.

Professor H. H. Childs, Pittsfield, Massachusetts.
" Charles A. Lee.
" William Tully,* New Haven, Connecticut.
" J. Knight, New Haven, Connecticut.
G. B. Guthre, M.D., New York City.
M. J. Bailey, M.D., New York City.
Professor Williard Parker, New York.
J. H. Brower, M.D., Lawrenceburg, Indiana.
M. M. Harding, M.D., Indiana.
George Sutton, M.D., Indiana.
J. C. Blackburn, M.D., Covington, Kentucky.
J. L. Hayes, M.D., Philadelphia, Pennsylvania.
Professor R. D. Mussey, Cincinnati, Ohio.
R. E. Houghton, M.D., Richmond, Indiana.
Robert Thompson,* M.D., Columbus, Ohio.
G. W. Boestler, M.D., Lancaster, Ohio.
W. B. Lyons, M.D., Huntington, Indiana.
J. M. Stevenson, M.D., Pennsylvania.
J. M. Kitchen, M.D., Indianapolis, Indiana.
S. P. Hunt, M.D., Sterling, Illinois.

* Dead.